PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.

Vol. 112, No. 19 Thursday, May 8, 1941 Price Ten Cents

Mexican Publishers Visit Canadian Mills

St. Maurice and Other Newsprint Paper Mills Inspected By Heads of Mexico's Leading Newspapers—Mexico Now Dependent Upon Canadian Production — British Supply Lower — Other News.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., May 5, 1941—Four of Mexico's leading publishers have been here during the past week in the course of a tour of inspection of paper mills in the St. Maurice Valley and other centers from which they receive their newsprint. They are: Rodrigo de Llano, president of Excelsior and Ultimas Noticias; Ignacio Herrerias, owner of Novedades and associated publications; Miguel Lanz Duret, Jr., president of the Cia Periodistica Nacional, publishers of El Universal and El Grafico; and Louis Navarro, publisher of La Prensa. They stated that they were particularly interested in examining the mills since they are now dependent for newsprint upon Canada because their former Baltic supplies are cut off. Senor de Llano, in an interview here, said the Mexican people are predominantly in favor of Britain in the war, and remarked that reports of Nazi activities in Mexico were very much exaggerated.

"There's no danger of them being able to organize any Fascist party among the Mexicans," he continued. "We have had a great deal of radicalism in Mexico in the past few years, and the trend in the country generally is towards conservatism. Our president, Avila Comacho, is an extremely able and well-balanced man and popular. I do believe that Mexico is in for a period of real prosperity now."

Mexican Newsprint Import Firm Reorganized

A. B. Muddiman, Canadian Trade Commissioner at Mexico City, reports to the Trade and Commerce Department at Ottawa that the Mexican national organization called Pipsa, the full name of which is Compania Productora e Importadora de Papel, S. A., which has the sole right to import foreign newsprint into Mexico, has been reorganized. In this reorganization the leading Mexican newspapers were given chief control, and Pipsa has changed from a revenue-producing body for the government into an organization which has lowered the price of newsprint to the newspaper and becomes interested in the creation of a local newsprint industry sponsored by the government.

Some 30,000 tons of newsprint will probably be purchased by Mexico during the current year. About 7,500 tons have already been purchased, one order being given to Finland for 2,000 metric tons (or 2,204 pounds), and another placed in Canada. An additional quantity of more than 22,000 tons will be ordered in the Dominion during the year.

British Newsprint Supplies Lower

News received here is that as from April 13 newsprint consumption by United Kingdom publishers was reduced from 6,700 tons weekly to 5,000 tons. On an annual basis this puts consumption at 260,000 tons as compared with about 900,000 tons prior to the war. Lord Rothermere is reported as saying that even at the reduced consumption it is unlikely newsprint supplies from domestic and overseas sources will be sufficient to maintain four-page papers.

New Officials for Fraser Companies

Announcement is made of the appointment of Hubert H. Henderson, as treasurer and credit manager, and of Henry C. Noseworthy as secretary of Fraser Companies Limited and subsidiary companies. Mr. Henderson, who entered the company's service in 1919, has been assistant treasurer and credit manager of the company and its subsidiaries since 1930. Mr. Noseworthy joined the company in March, 1933, and later in that year was appointed assistant secretary, the position which he has held up to the present.

Sweden Testing Utility of Sulphite Pulp

A despatch just received here from Swedish consular sources states that considerable progress is being made in utilizing for other purposes pulpwood and sulphite pulp formerly used in the making of paper, the overseas export markets for which are now cut off. The despatch says:

"Charcoal and wood are used as motor fuel as is also wood-tar and sulphite spirit, and cellulose, manufactured in a special way, has been tested as cattle feed with promising results, to mention some examples.

"The latter product, the fodder cellulose, is obtained through boiling sulphite longer than usual for paper-making purpose. Through this proceeding the

(Continued on page 19)

Wisconsin Acquires Large Timber Tract

State Conservation Commission Takes Possession of 19,000 Acres Of Land Along Flambeau River Sold To It By the Tomahawk Kraft Paper Co.—New Bill Limits Tax Deductions—Other News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., May 5, 1941 — The Wisconsin Conservation Commission has taken possession of 19,000 acres of land sold to it by the Tomahawk Kraft Paper Company. The land is along the Flambeau River, above Park Falls, Wis., and includes about 50,000 feet of riven frontage. The area will be known hereafter as the Flambeau River State Forest, and will be reforested where timber is not now growing. The deal included flowage and power development rights.

Spring plantings for reforestation throughout the state will total 18,700,000 trees, the Wisconsin Conservation Commission announces. About 40 per cent will go in private forests, among which are those of the Nekoosa-Edwards Paper Company, Consolidated Water Power and Paper Company, and Tomahawk Kraft Paper Company. The trees are supplied from nurseries at Wisconsin Rapids, Trout Lake and Gordon, Wis.

State Bill Limits Tax Deductions

Paper mills, along with other corporations, will pay a higher state income tax for 1941, following the enactment of a new tax bill by the Wisconsin Legislature. Previously, all federal taxes were deductible, but the new bill limits the deductions for corporations to 10%. This step was taken to prevent the state from losing income because of the soaring federal income taxes. The bill has been signed by Governor Julius P. Heil.

Large Attendance Expected at Safety Meeting

An attendance of 2,000 is expected at the fourteenth annual Fox River Valley and Lake Share Safety Conference at Fond du Lac, Wis., May 22.

The morning session will open at 9 o'clock at the Fond du Lac theatre, at which Voyta Wrabetz, chairman of the Wisconsin Industrial Commission, will speak on "Wisconsin Industrial Safety Codes—Education and Enforcement." Part of this program will also be devoted to safety for sportsmen.

One of the twelve sectional meetings in the afternoon will be devoted to the pulp and paper industry.

The conference will close with a banquet at 5:30 at the Retlaw Hotel. Dr. Allan A. Stockdale of the National Manufacturers Association, New York, will speak on "What Is the American Way?" At 8:30 P. M. there will be a demonstration of fire fighting at the fair grounds, followed by a ball game.

Cannard Company Moves

The Cannard Manufacturing Company, makers of paper converting machines, has moved its equipment from Green Bay, Wis., to a new plant at Little Chute, Wis. Production is to be resumed soon. The plant was erected for the company by the Little Chute Business Association, and will employ 25 persons.

Scott Co. Appoints J. B. Hay

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., May 5, 1941—Announcement is made of the recent appointment of John B. Hay, assistant secretary and export manager of the Scott Paper Company to the head of the Consumers' Representative department. Mr. Hay will direct the activities of a department that has few, if any, counterparts in American industry. It conducts constant surveys to determine the qualities consumers desire in the products made by Scott. Then it is empowered to demand these qualities from the production department. Its staff of twenty-seven persons is divided between consumer interviews and continuous product testing in the plant. The department holds the power of rejection of any material that fails to come up to its specifications. The department was organized by Arthur Scott, son of the founder of the company. Thomas B. McCabe, who succeeded Mr. Scott as president, has continued its policies.

Mr. Hay joined the company in 1926. He was made export manager and assistant secretary in 1929. He succeeds John Hagar, who will become manager of Scott's industrial sales division at Pittsburgh. Hagar, who joined the company in 1932, has headed the Consumers' Representative department since March, 1939.

Latest Wood Pulp Ruling

Since wood pulp was put on the Export Control List some confusion has arisen as to the classification of some grades of pulp and the definition of the licensing method adopted. The term "license" has been interpreted to mean that a license is required, while the term "no license" is understood to mean that no license is necessary.

The latest ruling followed by the custom authorities is that "purified" chemical wood pulp will require a license, while "unpurified" chemical wood pulp will require no license.

The term "unpurified" chemical wood pulp is generally understood in the trade to cover all papermaking grades. The "purified" grades would include only the more refined rayon and special grades of chemical wood pulp.

Information on license applications forms and copies of the regulations and executive orders controlling licensing of exports, which are subject to change, may be obtained from the Division of Controls, Department of State, Washington, D. C., or in New York from the Assistant Administrator of Export Control, Room 602-B, 92 Church street. Applications for licenses should be submitted only to the Division of Controls, Department of State, Washington, D. C.

Uptrend in Demand Continues in Midwest

Bond, Ledger and Mimeograph Lines Reported In Strong Position This Week — Demand For Other Grades of Paper Expanding — Business Is Higher With Payrolls Up 21 Per Cent — Other News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., May 5, 1941 — The Chicago paper market continued to surge upward during the week. Reports from all sides indicated a continuation of the widespread demand and firming up which has characterized local conditions for weeks. For the first time, certain grades of paper were reported to have broken through the list with some lines of bonds, ledgers and mimeos reported as having advanced around $10 a ton. This news is expected to have an immediate effect on other grades with every effort being made to develop an orderly condition in every division of the local paper industry. Krafts continued very strong while groundwoods and newsprints likewise reported very noticeable improvement. Books and covers remain very firm with broadening out of demand. The board market was very firm while the waste paper markets were quoted as strong. Mills, in general, were said to be between eight and ten weeks behind schedule.

Berkshire Increases Space

Berkshire Papers, Inc., paper merchants handling all kinds of printing and wrapping papers and located at 450 West Superior street, Chicago, on May 1 added 15,000 square feet to its warehouse space. The company will now be occupying seven times as much warehouse space as was necessary when the company was started in 1926. Materially increased business and a desire to provide more adequate and complete service to customers prompted the expansion, according to Berkshire Paper executives.

Business Shows Upward Trend

Chicago's business advance during the past twelve months is graphically portrayed in the following comparisons for March 1940 and March 1941: new building contracts (cost) up 178%; factory payrolls, up 21%; telephones, up 3%; electric power production, up 10%; new automobile registrations, up 57%; bank clearings, up 19% and car loadings up 27%. Capital investment in the industrial plants of the Chicago area has been increased by $16,415,000 during the past 30 days and seventy-eight companies have authorized either new factories or additions to existing manufacturing facilities. These figures have been forcefully presented to the local paper industry as added reason for the market upturn in local volume as business in this sector swings into high gear.

Legislature Nears Adjournment

The Illinois Legislature goes into its final two months with action on amendments to the Unemployment Compensation Insurance Act and to the Workmen's Compensation Act both as yet undeveloped or at least not ready for legislative consideration. Both are being considered by sub-committees of employer and employee groups with the hope that agreed bills may eventually be presented. Meanwhile, the Senate has tabled S.B.232, the proposed State wage-hour measure, and employer groups have high hopes that a similar House proposal will meet about the same fate in the very near future.

Advertises "Durotint" Paper

The Heco Envelope Company, well known Chicago envelope manufacturer, is widely advertising "Durotint," a paper which permits catalog and heavy advertising piece mailing in colorful envelopes of sufficient strength to stand all ordinary tests. Durotint, comes in six bright colors. The colors are Peacock Blue, Peach, Primrose, Lemon, Ivory and Mandarin. "Beauty and Strength in Durotint", is the title of the recent advertising mailing piece.

Customs Collections Up

Customs collections in the Chicago district both in April and for the first four months of the current year have registered sharp increases over the corresponding periods of 1940 and 1939 according to J. A. Ziemba, collector of customs. Chicago district customs collections for April totaled $1,167,751 as compared with $713,869 for April, 1940 and $770,291 for April, 1939. For the first four months of the current year, the Chicago district collected customs payments of $3,300,083 as against $2,681,533 for the corresponding period of 1940 and $2,967,940 for 1939.

Salesmen Plan Golf Outing

The Salesmens Association of the Paper Industry, western division, spent its Monday, April 28, luncheon and meeting period discussing the general conditions in the paper industry. Salesmen also were given a semi-final word on the approaching initial golf outing to be held at the Sunset Ridge Country Club on Friday, May 23. According to Ed Rolaine, golf chairman, Sunset Ridge offers sporty golf in a beautiful setting and a commodious and well equipped club house is designed to give plenty of added attractions for the non-playing salesmen and their guests.

Ontario Specialties Sold

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., May 3, 1941—Announcement is made of the sale of the Ontario Specialties, Inc., a branch of the St. Regis Paper Company, to the Western Tablet and Stationery Company, of St. Louis, Mo. The concern was organized in 1919 by Carl B. Martin, Corwin T. Jewell and the late Raymond J. Parham for the manufacture of pads, tablets, composition books, notebooks and other school supplies. Also connected with it is a printing department which turned out the form printing for the various branches of the parent concern. This department will be continued and probably moved in the near future to some other plant. The machinery and equipment disposed of consists of paper converting machines, bundle cutters, sewing machines, paper ruling machines, staplers and drills.

Lauds Improved U.S. and Canadian Relations

Late Developments Cited As Indicating Closer Cooperation Now Between U. S. Newspaper Publishers and Canadian Newsprint Manufacturers—Size of British Papers May Be Again Reduced.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., May 5, 1941 — The influential *Financial Post* of this city, devotes considerable space this week to an article by its Eastern editor, John Langdon, on what he conceives to be "one of the notable achievements of the past two years," in the pulp and paper industry. He is referring to the improved relations between Canadian newsprint manufacturers and United States publishers and points to several developments in recent months to substantiate his story.

The article points out that in years past relations between Canadian manufacturers and United States publishers have been particularly acrimonious at times, but that the defense policy of the Canadian manufacturers has ushered in a new area of understanding and that there is now a realization that neither industry can profit at the expense of the other. Two developments of late, in particular, indicate this newer conception of the relationship between the two interests, according to the author.

Last week the American Newspaper Publishers' Association held its annual meeting in New York and not only invited the president of the Newsprint Association of Canada, Charles Vining, but gave him a place on the program. This, in the opinion of the *Financial Post's* Eastern editor, was an unprecedented action as it was the first occasion on which an outside person had been invited to attend a session of the publishers' convention—one of the most exclusive affairs of its type held in the United States.

Refers to Resolution as Significant

Another thing that seemed to the author of the article under review, as very significant, took place last February, when the Inland Daily Press Association, representing over 300 daily newspapers published in 19 states and two Canadian provinces, passed a resolution unanimously setting out appreciation of the stand taken by the Canadian manufacturers of newsprint. This resolution referred to the fact that shortly after the outbreak of the war, Canadian newsprint manufacturers set down a policy to which they have rigidly adherred. They agreed not to take advantage of war conditions to boost the price of their product. The basic price of $50 a ton was reaffirmed and has since been extended to the end of June of this year. Thus for a period of 24 months the Canadian manufacturers have bound themselves to sell newsprint paper at the pre-war price. As a matter of fact, the price of newsprint has not been changed since the beginning of 1938.

Reflecting the closer understanding between the producer and the consumer is the action taken by the American Newspaper Publishers' Association in urging their members to do their buying in regular monthly amounts. In past years it has been the custom of the American publisher to take delivery of his newsprint as required. This was possible because of the nearness of the sources of supply and the unexcelled transportation facilities between the two countries. The war created unusual problems, however, both as to deliveries and transportation, especially for water-borne shipments. The system of regular monthly orders has been an important factor in maintaining orderly conditions of production and delivery. Without this co-operation the difficulties of Canadian mills in meeting sudden disturbances of overseas supply and demand would be seriously aggravated. The publishers last week again urged their members to maintain this policy.

Assurances of U. S. Defense Committee Cited

Still further indication of the improved relationship of the publishers and the manufacturers is seen by the *Post's* Eastern editor in the assurance given by the United States Defense Advisory Commission and the Board of Transport Commissioners of Canada that, should conditions necessitate, priority in transport will be given newsprint as an essential commodity.

In conclusion the article points out that Canadian producers might have made more money in the last couple of years by following a day-to-day policy, but their farsightedness in following a policy of co-operation and moderation should aid them to return to peace-time conditions without the serious repercussions such as followed upon the last war.

Four-page Papers Too Much for British Stocks

Emphasizing the effects of the European conflict on everyday life in Great Britain comes a dispatch from London stating that Lord Rothermere, on behalf of the Newsprint Supply Company, has advised all British publishers with stocks of newsprint in vulnerable areas to disperse them in safer areas and in as many separate locations as possible to minimize the risk of loss through enemy bombing and in view of the scarcity of supplies. In particular, he emphasized, no time should be lost in clearing newsprint from ports.

Even at the reduced consumption of 5,000 tons weekly, it is unlikely newsprint supplies from domestic and overseas sources will be sufficient to maintain four-page papers, Lord Rothermere says, without drawing on the already diminished stocks.

The Newsprint Supply Company, a co-operative organization of the publishers, formed for the purpose of buying newsprint through one central agency, has worked out a plan for the storage of paper in the open so as to minimize the risk of damage or loss of paper through enemy action.

Swedish Index Number for Pulp Higher

WASHINGTON, D. C., May 7, 1941 — Wholesale price index of Swedish pulp and paper was 146 points in January, 1941, compared with 134 in the same month last year, according to the Department of Commerce. Combined index of Swedish wholesale prices rose from 136 to 162 in the same period.

New England TAPPI Meets

The New England Section of the Technical Association of the Pulp and Paper Industry met at the Roger Smith Hotel, Holyoke, Mass., Friday evening, April 25, 1941. William Foote, vice-chairman, presided at the business meeting following the dinner. Announcement was made that the next meeting would be held at the Nashua Country Club, Nashua, N. H., on Friday, May 23.

Warren E. Emley Speaks

Warren E. Emley, chief, Division of Fibrous and Organic Materials, National Bureau of Standards, outlined the work of the A.S.T.M. Sub-Committee No. 1 of Committee D-6 on Paper and told of the standards that they were setting up for the paper industry. He also spoke about the correlation of the work of the A.S.T.M. and TAPPI and the advantage of having a disinterested group analyze specifications set up by other groups for the industry. The advantage of checking and double checking standards is of utmost help and assures the exactitude of specifications when published.

Address by Robert D. Bonney

Robert D. Bonney, assistant manager of manufacturing, Congoleum-Nairn, Inc., began his talk by giving a little of the history of linoleum and congoleum manufacture. He spoke of the different grades of saturating paper used in making congoleum and of the many tests that they use in making a standard uniform product. Different grades of congoleum are made for different use requirements and these are manufactured to definite specifications.

George H. Harnden Speaks

George H. Harnden, Standardization Department of General Electric Company, stressed the multiplicity of products made by the General Electric Company and of their manufacture in all parts of the country. Since the final product is assembled from parts made in these different locations standards and specifications are imperative to the General Electric Company in order that their products may be assembled uniformly.

Lewis S. Reid Speaks

Lewis S. Reid, director of Standardization Laboratory of Metropolitan Life Insurance Company, spoke of the value of standardization and simplification for the Metropolitan Life Insurance Company and told how they had reduced the number of their forms by classifying grades to the use requirements. In using the right papers their complaints have been very materially reduced, purchases simplified and money saved. By buying fewer grades in larger quantities they have simplified their inventory. Better quality and satisfaction in their paper purchases have been the outstanding results to Mr. Reid's company by their process of standardization.

Morris S. Kantrowitz, technical director of Government Printing Office, spoke of the methods of handling, sampling, testing, rejecting and accepting paper by the U. S. Government Printing Office which is the largest printing plant in the world, producing annually $20,000,000 of printed matter. He showed the way in which the Government Printing Office sets up specifications for paper purchases which amounted to over $6,000,000 last year and included 82 different grades of paper. Each grade is made to definite specifications and the work of the Government Laboratory is not only the testing of the paper purchases for adherence to requirements but also to develop new methods for testing and have them approved by the Paper Industry.

The Government Printing Office has been of great service to the industry in developing yardsticks for paper buying. Its greatest research problem today is setting up specifications for printing qualities, such as surface finish, porosity, ink receptivity, softness or compressability, expansion and contraction with atmospheric influences and moisture content. One of the greatest sources of trouble to the Government Printing Office is unsatisfactory general appearance of the paper, particularly dirt, resinous specks, metallic particles and unsatisfactory calendering. This condition was responsible by far for the largest number of rejections they made last year.

The audience was very much impressed with Mr. Kantrowitz' presentation of his very splendid paper and of his fairness to the papermakers in understanding their difficulties as well as his tolerance in rejections and acceptances of deliveries.

Among those present were: W. H. Anderson, Donald T. Arharn, E. W. Ballou, P. S. Barnhart, John Bellows, R. G. Betts, Maurice Blew, P. S. Bolton, R. D. Bonney, Jack Brougham, John B. Calkin, George Carroll, Charles Champion, R. J. Clapp, Fred Clark, James Coghill, Joseph A. Constance, L. W. Crouse, C. W. Damon, Charles Davidson, Arthur Dionne, Warren E. Emley, William S. Emley, Alex Euston, Herbert Federhen, Howard Ferguson, Jim Fish, William Foote, Paul Fowler, Bill Gallagher, A. F. Gilmore, William Glendon, R. C. Griffin, Lois Hans, George Harnden, R. J. Hemphill, Walter Hendrich, Irving D. Hughes, Jr., M. S. Kantrowitz, Werner Kaufmann, Lena E. Kelley, John P. Kennedy, P. J. Kennedy, Helen U. Kiely, Charles C. Kirche, F. S. Klein, Paul Knight, A. C. Lamoureux, John T. Leecock, Leroy A. Love, R. H. Love, E. M. Loveland, Ronald Malloch, Edward McQuillan, H. L. Millen, Harold Miller, Ralph B. Millington, John F. O'Leary, H. W. Phillips, Robert Proctor, C. L. Reece, E. O. Reed, Lewis Reid, Murray Rubin, Fred Schneider, David Scott, L. N. Smith, James Spadaro, T. L. Stirling, John Studeny, George Sullivan, Charles Taugher, Leonard P. Taylor, J. J. Thomas, L. B. Tucker, Justin Waite, George R. Wallace, A. K. Warner, P. F. Wehmer, Philip Weston, Jr., C. A. Weymouth, William Whiting, Jr., W. R. Willetts and L. M. Yoerg.

Arnold Roberts Co. Has Sales Meeting

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 28, 1941—General conditions were discussed at a sales meeting at the office of The Arnold Roberts Company Saturday morning. Among those present were Ryder H. Gay, Providence manager, and Ron Pierce, Springfield, Mass., manager.

Charles L. Ellis Heads Downingtown

"Charlie" Ellis, as he is known to his many friends in the paper and board industry, was elected president of the Downingtown Manufacturing Company at the meeting of its Board of Directors on April 17. Mr. Ellis began his work in the paper industry with Charles Carr, M.E., of Boston, who was consulting engineer for a number of paper mills. Later he went with F. W. Bird & Sons, East Walpole, Mass., to take charge of the Box Shop Division Drafting Room. He was transferred to the Paper Mill Division Drawing Room and later was made Master Mechanic, a position he held several years.

When Bird & Son bought the Roofing Felt Mill

CHARLES L. ELLIS

in Pont Rouge, Quebec, he was sent there as superintendent of this mill, remaining there several years. From Bird & Son he went to the Downingtown Manufacturing Company in 1911 as sales engineer. He became a director in 1914, second vice-president and sales manager in 1920, and first vice-president in 1932.

A great believer in the use of suction rolls, properly applied, on the wet ends of Fourdrinier and cylinder machines, he was instrumental in acquiring the Kilberry suction roll, particularly adapted for high speeds due to the radical changes in construction. A costly lawsuit established their right to offer this advanced roll to the paper trade, which has benefited enormously, although at the same time opening the door to other roll manufacturers.

He has been a member of the American Pulp and Paper Mill Superintendents Association since the early days of this organization, was an organizer of the Pennsylvania-New Jersey Division, and was chairman of this division several times. He has taken out several patents, among them being the well-known extractor roll and the Downingtown Wire Faced Suction Extractor Roll.

The present Board of Directors, in addition to Mr. Ellis, includes the following: Ellis Y. Brown, Jr., who came with the company as treasurer in 1902, became a director in 1906 and in 1909 was elected secretary and treasurer. In 1932 he was elected second vice-president and at the same time continued serving as secretary and treasurer. His work has to do mostly with finance and credits.

Jacob Edge, who came with the company in 1909 as a salesman, has made many friends in the industry and will continue to handle the company's customer contacts as one of the vice-presidents and a director. He has contributed a number of valuable patents to the company.

Enright A. Ellis, who came with the company on June 8, 1934, after graduating with a Chemical Engineering Degree from the Pulp and Paper Division, University of Maine, went with the Veldown Company, of Glen Falls, N. Y., where he worked in all operating departments. He was elected assistant general manager and director of the company on January 16, 1941.

Edward T. Street, who came with the company as chief engineer on January 15, 1929, was formerly Superintendent of Power for the Minnesota & Ontario Paper Company and later was chief engineer for the various plants of the Ruberoid Company, both here and abroad. He has gained prominence as an expert on wall board and asbestos shingle machines. He was elected director on January 16, 1941, and continues as chief engineer. Mr. Street has a number of patented inventions now in use in the paper industry.

W. Perry Tyson, Esq., who became a director of the Downingtown Manufacturing Company on January 20, 1938, is vice-president and trust officer of the First National Bank of West Chester, Pa.

Bids for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 7, 1941—Government Printing Office has received the following bids for 11,000 pounds of white M.F. book paper in 38 inch rollers: R. P. Andrews Paper Company, 5.85 cents; Stanford Paper Company, 5.85 cents; Whitaker Paper Company, 5.75 cents; and Mudge Paper Company, 5.39 cents.

For 10,000 sheets of 22 x 28 gray mount board: George F. Muth & Company, $70 per M sheets; Whitaker Paper Company, $36.32; Mudge Paper Company, $36.48; Barton, Duer & Koch Paper Company, $36.45; Milton Bradley Company, $40; and R. P. Andrews Paper Company, $39.90.

For 11,171 pounds (67,500 sheets) of 36½ x 53 white sulphite writing paper: Barton, Duer & Koch Paper Company, 6.75 cents; Stanford Paper Company, 6.9 cents; and Mudge Paper Company, 6.69 cents.

For 48,000 pounds (200,000 sheets) of 38 x 50 supercalendered book paper: Frank Parsons Paper Company, 5.79 cents; Whitaker Paper Company, 6.39 cents; Mudge Paper Company, 5.5 cents; R. P. Andrews Paper Company, 5.74 cents; Stanford Paper Company, 6.86 cents; and Paper Corporation of U. S., 6.39 cents.

North American Starts No. 3 Machine

George Lutz, sales manager of the North American Pulp and Paper Corporation with offices at 200 Madison avenue, New York, announces that the plant at Cheboygan, Mich., has started up its No. 3 machine which has been shut down during the last two months to change over to specialty items. W. R. Zwecker is manager of the mill.

Why are Oscar's oranges fresh?

BECAUSE THEY'RE RUSHED TO HIM WITH THE HELP OF THE TELETYPE

In getting perishable foods from grower to grocer, speedy communication is of prime importance. That's why many packers, brokers and shippers depend on the teletypewriter.

Businesses of *every* kind depend on Bell System Teletypewriter Service (typing by wire) . . . to unify scattered units . . . flash orders accurately between office and factory . . . exchange bids and offers in typewritten form . . . to step-up efficiency at distant points.

Perhaps the speed and typewritten accuracy of this modern communication method are proving profitable in *your* business. Perhaps, too, by more strategic use or added installation they can be made to prove even *more* profitable. Surely, it's worth investigating. Why not call a Bell System representative through your local telephone office and talk it over?

BELL SYSTEM TELETYPEWRITER SERVICE

CONSTRUCTION NEWS

Georgetown, S. C.—Southern Kraft Corporation, 220 East 42nd street, New York, N. Y., has plans maturing for expansion in kraft paper mill at Georgetown, used for production of corrugating board specialties, liner board and kindred board products. Work will include new buildings for pulp and finished paper divisions, with installation of machinery for large increase in present capacity. A new paper-making machine and auxiliary equipment will be installed. Entire project is reported to cost several million dollars with machinery, and is scheduled to begin at early date. Company also will develop additional housing facilities for workers at mill. Company is a subsidiary of International Paper Company, first noted address.

West Hopkinton, N. H. — The Davis Paper Company, manufacturer of newsprint, has plans nearing completion for new addition to mill for expansion in production department. It will be one-story, reported to cost close to $70,000, including equipment. Erection contract is scheduled to be awarded at early date.

Kaukauna, Wis.—The Thilmany Pulp and Paper Company, manufacturer of tissue, greaseproof and other processed paper stocks, will use new addition to mill, recently referred to in these columns, for installation of a new 120-inch asphalt coating and combining machine, and auxiliary equipment. Structure will be one-story, 52 x 180 feet, and is reported to cost approximately $80,000, with equipment. The Permanent Construction Company, 2712 North Holton street, Milwaukee, Wis., has the general erection contract and work is scheduled to be placed under way at once. New unit will be located at upper mill of company.

Perth Amboy, N. J.—The Scandore Paper Box Company, Inc., 35 Steuben street, Brooklyn, N. Y., manufacturer of stiff and folding paper boxes and containers, has concluded arrangements for purchase of industrial building on Cornell street, Perth Amboy, formerly occupied by the Bayuk Cigar Company, and will improve and equip at once for new branch plant. Present plant at Lansdowne, Pa., will be removed to new location and capacity increased. It is expected to have plant ready for operation at early date, giving employment to over 100 persons. Frank Scandore is president.

Canton, Ohio — The Canton Corrugated Box Company, 2820 Winfield way, N.E., manufacturer of corrugated boxes and containers, has plans nearing completion for new addition to plant, consisting of a one-story structure, to be used for expansion in production department. No estimate of cost has been announced. It is proposed to ask bids on general erection contract at early date. Lorenz & Lorenz, Canton, are architects.

Buffalo, N. Y.—The United States Corrugated Fiber Box Company, Inc., 180 Hopkins street, manufacturer of corrugated boxes and containers, has taken out a permit for erection of proposed new addition to plant, recently referred to in these columns, and will proceed with superstructure at once. New building will be one-story, about 80 x 300 feet, and will provide about 25 per cent increase in production. It is reported to cost close to $100,000, with equipment. The Austin Company, 16112 Euclid avenue, Cleveland, Ohio, engineer and contractor, designed the building and will carry out construction.

Laurel, Miss. — The Masonite Corporation, Laurel, manufacturer of insulating board and other processed board products, has completed plans for new addition to mill, comprising a large one and multi-story building, with auxiliary structures adjoining, reported to cost in excess of $200,000, with equipment. Contract for structural steel framing has been let to the Ingalls Iron Works Company, Birmingham, Ala., and erection is scheduled to begin at early date.

Chicago, Ill.—The Acorn Corrugated Box Company, 2536 South Wabash avenue, manufacturer of corrugated boxes and containers, has plans for alterations and improvements in three-story plant at location noted. Work will be carried out soon. No estimate of cost has been announced. M. Louis Kroman, 180 North Michigan avenue, is architect. Julius Marwick is president.

Redwood City, Calif.—The Paraffine Companies, Inc., 475 Brannan street, San Francisco, manufacturer of building papers, roofing papers and kindred products, has work under way on new addition to branch plant at Redwood City, consisting of a large one-story building, for which general contract recently was let to Cahill Brothers, 206 Sansome street, San Francisco. Cost estimated over $250,000, with equipment. Completion is scheduled early in July. Redwood City mill is operated in name of Plant Rubber and Asbestos Company and used for production of insulating materials.

Bridgeport, Conn.—The Equity Paper Company, 54 Harral avenue, commercial paper products, has awarded general contract to John P. Rowins, Church Hill road, Fairfield, Conn., for new one-story addition to storage and distributing plant, about 48 x 60 feet, reported to cost about $21,000, with equipment. Work will be placed under way soon. Lyons & Mather, 211 State street, are architects.

Jamestown, N. Y.—The T. James Clarke Box and Label Works, Inc., 38 Charles street, manufacturer of paper boxes and containers, has completed plans for new addition to plant, consisting of a one-story building, 60 x 120 feet, to be used for expansion in production department. General erection contract has been awarded to the Warren Construction Company, 335 Steele street, Jamestown, and erection will be placed under way at once. T. James Clarke is president.

Corcoran, Cal.—The Alpha Cellulose Corporation, recently organized to manufacture cellulose products, has arranged for lease of a plant near Corcoran, formerly used as a beet sugar mill, and will take immediate possession. It consists of several one and multi-story units, which will be improved and equipped for cellulose products manufacture, using flax straw and cotton stalks for raw materials. Equipment and facilities will be installed for large production. Company has taken an option to purchase property at a later date.

DU PONT BRILLIANT CROCEIN FL

● This product has served the paper industry for many years and is recognized for its outstanding qualities. It possesses several characteristics which make it especially valuable:—

- ▶ **It has greater affinity for paper than most other acid colors and gives fairly clear backwaters even in deep shades.**
- ▶ **It is the fastest-to-light soluble aniline red used on paper.**
- ▶ **When used in high concentrations it causes practically no foam.**
- ▶ **It produces a minimum of two-sidedness—in pink bonds the top side is hardly distinguishable from the wire side of the sheet.**
- ▶ **It possesses good solubility.**

Du Pont Brilliant Crocein FL is recommended for the production of light pink to deep scarlet shades on bond, cover, wrapping and other papers where non-two-sidedness and fastness-to-light are desired.

DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & COMPANY (INC.)
Organic Chemicals Dept., Dyestuffs Div., Wilmington, Delaware

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending May 7, 1941

	High	Low	Last
A. P. W.	1⅝	1⅝	1⅝
Armstrong Cork Co.	26½	25½	26
Celotex Corp.	9⅛	9	9⅛
Celotex Corp., pf.	..	..	..
Certain-Teed Products Corp.	3¼	3	3¼
Certain-Teed Products Corp., pf.	26	23½	26
Champion Paper & Fibre Co.	18	18	18
Champion Paper & Fibre Co., pf.	104	103	103
Congoleum-Nairn Co.	14½	14⅛	14¼
Container Corp. of American	13⅛	12¾	12⅞
Continental-Diamond Fibre Co.	7⅞	7¾	7⅞
Crown-Zellerbach Co.	12¼	11⅞	12⅛
Crown-Zellerbach Co., pf.	85½	82½	85½
Flintkote Co.	12⅜	12⅛	12⅜
Robert Gair	1½	1⅜	1⅜
Robert Gair, pf.	8⅜	8	8⅛
International Paper & Power	13¾	12⅞	13½
International Paper & Power, pf.	65½	62½	65⅛
Johns-Manville Corp.	58½	57½	58½
Johns-Manville Corp., pf.	127	126¾	127
Kimberly Clark Corp.	28	28	28
Mac Andrews & Forbes	25	25	25
Mac Andrews & Forbes, pf.	135	135	135
Masonite Corp.	21	20⅛	20¾
Mead Corp.	7⅝	7½	7⅝
Mead Corp., pf.	..	..	..
Paraffine Companies, Inc.	..	..	..
Paraffine Companies, Inc., pf.	..	..	..
Rayonier, Inc.	11½	11	11¼
Rayonier, Inc., pf.	23⅞	23½	23⅞
Ruberoid Co.	15½	14¾	15¾
Scott Paper Co.	37	36	36
Scott Paper Co., pf.	110½	109½	109½
Sutherland Paper Co.	19¼	19	19
Union Bag & Paper Corp.	10⅝	10⅛	10¼
United Paperboard Co.	2¾	2¾	2¾
U. S. Gypsum Co.	57	55½	56⅝
U. S. Gypsum Co., pf.	172½	172¼	172½

New York Curb Exchange

High, Low and Last for the Week Ending May 7, 1941

	High	Low	Last
American Box Board Co.	4½	4½	4½
Brown Co., pf.	15½	15½	15½
Great Northern Paper	39½	39	39½
Hummel-Ross Fibre Corp.	5⅞	5½	5½
National Container Corp.	11¾	11⅝	11¾
St. Regis Paper Co.	2	1¾	1⅞
St. Regis Paper Co., pf.	85½	84½	85½
Taggart Corp.	2¼	2⅜	2¼

Puget Sound Earns $318,834

The Puget Sound Pulp and Timber Company made a net profit of $318,834 in the three months ended March 31, 1941, after provision for Federal taxes at the rate of 51%, according to an interim report with which the Company inaugurates a policy of quarterly reports to stockholders. These earnings were derived entirely from operation of the Company's Bellingham mill; prior to the sale of the Company's Anacortes mill last year, net profit after tax provisions from combined operations of both the Bellingham and Anacortes plants was $180,309 for the first quarter of 1940.

Net profit after preferred dividends was equivalent to 93 cents a share on the common stock in the first quarter of 1941, compared with 57 cents in the same quarter last year.

Net sales of unbleached sulphite pulp from the Bellingham mill were $1,660,668 for the first quarter of 1941, compared with $1,269,182 combined Bellingham and Anacortes sales in the same quarter of 1940. Operating profit after depreciation but before tax provisions, amounting to $657,854 in the March, 1941 quarter compare with $327,835 for both mills in the comparable period of 1940. Working capital at March 31 increased from $208,294 in 1940 to $1,081,465 in 1941.

Final cost of new construction and equipment at the Bellingham mill will be about $1,465,000, the Company's report states; within this cost plant capacity will be increased from 100,000 tons to 160,000 tons instead of to 150,000 as provided in the original estimate.

Approval of the Company's application for a Certificate of Necessity has been granted by the War Department's Advisory Commission to the Council of National Defense, according to the report. This will permit amortization of the cost of new construction and equipment within five years at the annual rate of 20% instead of at the customary rate of 5% yearly over 20 years.

Per share earnings for the 1st quarter of 1940 were stated higher when published last year. The foregoing figure of 57 cents gives effect to higher tax rates instituted in the 3rd quarter of 1940, applying retroactively to the entire year.

Modern Containers Votes Dividends

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., May 5, 1941—Operations of Modern Containers, Ltd., here, have continued the gain over 1940 reported in the first six weeks of the year. Operations for the first quarter of 1941 were well above the corresponding period of 1940 and no let-up is in sight, according to officials. Most of the plant is working two shifts, and the plastic department is on a 24-hour basis. The plastic division was set up in Ottawa in 1940 to manufacture plastic tube and bottle tops and other small molded articles.

Regular dividends of $1.37½ on 5½% preferred, 20 cents plus 10 cents extra on the common have been declared payable July 2, 1941, to shareholders of record June 20. Earnings for 1940 were $18.11 on the preferred, $1.51 on the common.

Consolidated To Pay Bond Interest

At the annual meeting of the Consolidated Paper Corporation, the President, L. J. Belnap said he could forecast the payment in cash on July 2 of one year's bond interest as provided in supplementary trust deed. He said that first quarter operating profit was slightly in excess of the corresponding period last year.

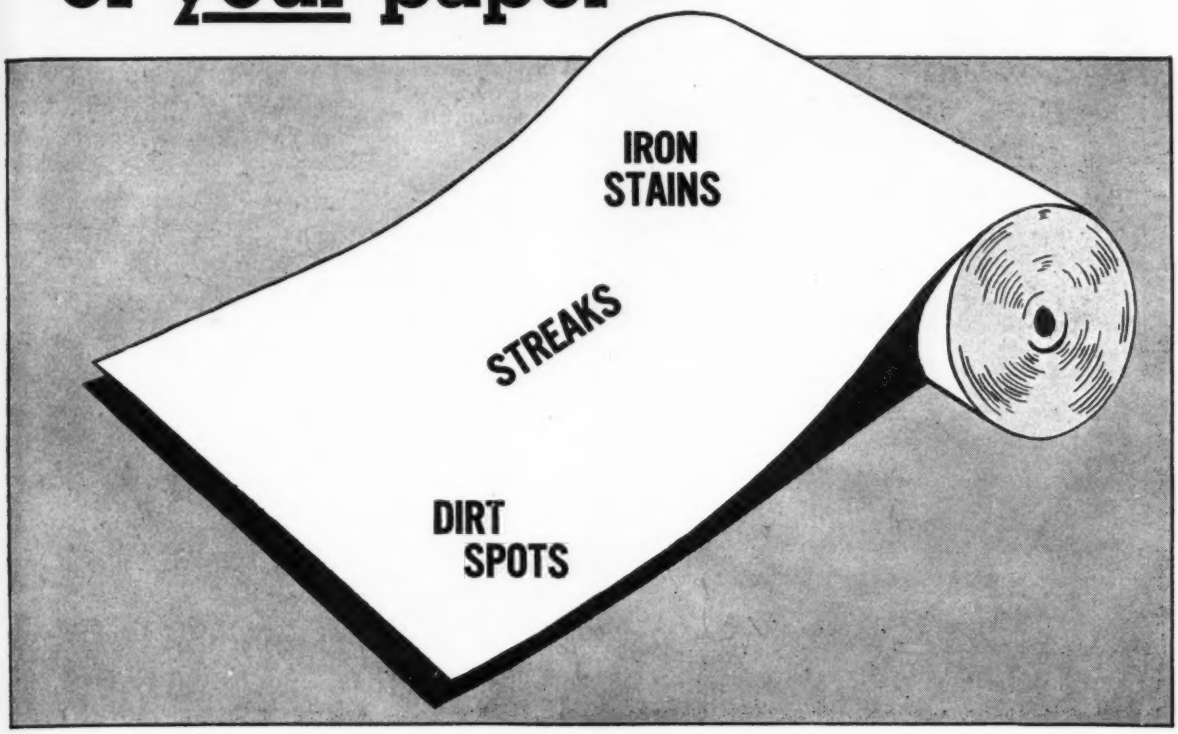
Mr. Belnap said that foreign exchange contributed $1,420,500 towards profits in 1940, which amounted to 16 2-3 per cent of the total income. He added that in the first quarter of 1941 net exchange receipts were at a rate somewhat less than the 1940 quarter.

"While amount of exchange is a considerable proportion of the 1940 net income," he said, "its continuity is by no means certain and it should be realized that it is distinctly of a transitory character."

Dealing with the balance sheet, Mr. Belnap said that as of April 21 last market value of investments was approximately $200,000 in excess of the book value.

Reviewing operating factors, he said that in the first 1941 quarter costs of labor and all kinds of materials were higher than the average for the full 1940

Keep these "Water Marks" out of your paper–



Insure the quality of your product..... with soft, clear, iron-free process water

Why risk the harmful effects of impurities in "natural" water? Permutit* provides modern, automatic equipment to give you full control, not only of your process water, but your boiler water, too.

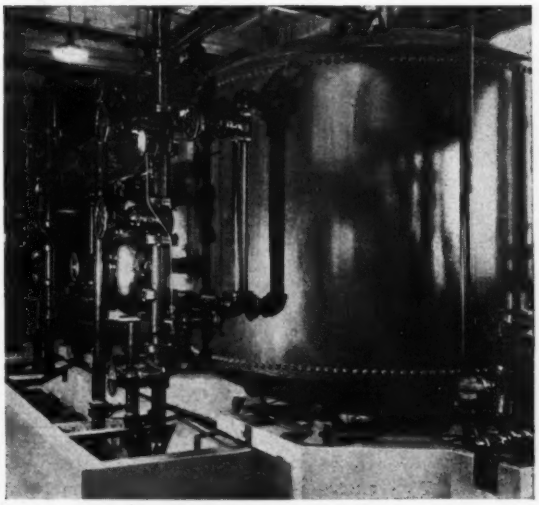
Permutit is the world's largest manufacturer of water conditioning equipment...makes every type. Get the benefit of Permutit's 25 years of experience in working out plans to fit the needs of your own plant.

Write for free booklet to The Permutit Company, Dept. 12, 330 West 42nd Street, New York, N. Y.

*Trademark Reg. U. S. Pat. Off.

PERMUTIT

WATER CONDITIONING HEADQUARTERS



IS YOUR PULP-MAKING PROBLEM IN ONE OF THESE BEAKERS?

Pulp manufacturers all over the country are taking advantage of Solvay's outstanding pulp technology service . . . a service which has proven highly successful because of Solvay's emphasis on down-to-earth as against "hypothetical" research.

Solvay is interested in the *every day* manufacturing problems . . . interested in helping the pulp maker get more out of his products—in helping him produce better products at lower cost.

In the Solvay laboratories, actual pulp and paper men with years of practical experience in pulp and paper mills study your problems and make sample runs of pulp as a basis for recommendations.

Solvay will be glad to send these pulp specialists into your plant to study actual operating conditions *and help adapt laboratory findings to specific plant conditions.*

Development of new products and new processes is another important aspect of Solvay research for the pulp and paper industry. One recent example of this work worth knowing more about is the new SOLVAY MULTI-STAGE PULP BLEACHING OPERATION.

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit
New Orleans • New York • Philadelphia • Pittsburgh • St. Louis • Syracuse

Plants Located At:

Syracuse, N. Y. • Detroit, Mich. • Baton Rouge, La. • Hopewell, Va.

60th ANNIVERSARY 1881 1941

These Solvay Products help you make better Pulp for all Purposes

SOLVAY CAUSTIC SODA • SOLVAY LIQUID CHLORINE
SOLVAY SODA ASH

year. Per ton of newsprints this amounted to $1.22, he said, pointing out also that an increase in freight rates in the western hemisphere had considerably reduced the mill net.

Mr. Belnap reviewed the financial position of the company over the past nine years. He said that the total improvement in current assets was approximately $22,000,000. When the increase in fixed assets, retirement of subsidiary bonds, increase in deferred changes and accounts receivable were considered total improvement during the period was $25,440,000, he added.

The program of replacement of obsolescent plant and equipment will be continued with a view to the reduction of costs.

Directors were re-elected.

Mr. Belnap said that since December 31, last, $2,144,442 of bond and debenture stock had been cancelled through sinking fund operations. Cost was $1,335,304, further improving the year-end position by over $809,000.

He said present funded debt amounted to $49,262,458, the decrease being reflected in a reduction in annual interest charges of $117,944.

Flintkote Calls Meeting

The Flintkote Company has called a special meeting of stockholders for May 21 for the purpose of authorizing and issue of 40,000 shares of $4.50 cumulative preference stock. It is expected underwriters will be headed by Lehman Brothers.

If the stock is issued the proceeds would be used to retire existing bank loans in amount of $2,225,000 and to provide additional working capital for general corporate use.

Scott Paper Nets 63 Cents

The Scott Paper Company reports for the period from January 1 to April 5, 1941, net income after charges of $422,306, equal to 63 cents a common share. This compares with net of $379,239 or 57 cents in the 1940 period. Sales set a new quarterly record, rising to $5,963,454, an increase of 13.4% over $5,260,281 in the 1940 period.

Oxford Paper Earns $212,101

Net earnings of $212,101 for the first quarter of 1941 reported by the Oxford Paper Company. This compares with $136,827 reported for the same period last year.

Restigouche Earnings Up

Restigouche Company, Ltd., for 1940: (Canadian currency) reports a net income of $289,679, compared with net loss in 1940 of $415,484.

Dee & Anderson in Larger Quarters

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., April 28, 1941—Dee & Anderson, Inc., 176 Federal street, have removed to larger quarters in Room 308 in the same building. They are representatives of the Foster Manufacturing Company, Inc., Strong, Me.; Harvey Paper Products Company, Sturgis, Me., and Paper Plate and Tray, Inc., Griffiths, Ind., and maintain a stock of all the items these firms produce.

VISIT CANADIAN MILLS

(Continued from page 7)

pulp becomes of an inferior quality but of a consistency which makes it suitable as cattle feed after mixture with other kinds of fodder. In this process the output of spirit is increased by about 150 per cent, whereby the production can be made to pay. After tests on a small scale the Swedish State has recently ordered 50,000 tons of such fodder, which together with 6,000,000 litres of alcohol obtained simultaneously, will be delivered before the end of the year. The first parcels of this fodder cellulose have already been sent to the Swedish island of Gotland in the Baltic, where the crop has turned out particularly bad.

"As regards the production of sulphite spirit this can be considerably increased through the last-mentioned process, but as it requires combination with production of fodder cellulose, only rather small quantities can be obtained in this way, unless the product shall not become very expensive. The majority of the Swedish sulphite spirit is received as by-product at the production of ordinary sulphite pulp, and as the latter has been heavily reduced owing to the war, the output of spirit has also gone down. Measures are, however, undertaken to enable a considerable increase of the sulphite spirit production, if necessary. Thus one new mill has recently been completed and four other ones are being built by various Swedish timber companies with the support of State loans. These mills will have a normal production capacity of about 15,000,000 litres of alcohol per year, which involves a 30% increase of the manufacturing capacity of the Swedish sulphite spirit industry at normal production."

Buys Paper Under Walsh-Healey Act

WASHINGTON, D. C., May 7, 1941—During the week ended April 19, the Government purchased $289,377.57 worth of paper under the Walsh-Healey act through the following orders: $54,500 worth of paper towels for Navy, S&A from Bogart Paper Company, New York; $15,358 worth of paper towels for Navy, S&A, from Blake, Moffit and Towne, Los Angeles, Cal.; $20,237 worth of toilet paper for War, QMC, Brooklyn, from Ashland Paper Mills, Inc., Brooklyn, N. Y.; $35,282.40 worth of paper towels for Navy, S&A, from Resolute Paper Products Corporation, New York; $37,584 worth of cover paper for Government Printing Office from Stanford Paper Company, Washington, D. C.; $14,088 worth of book paper for Government Printing Office from Marquette Paper Company, Chicago; $13,680 worth of book paper for Government Printing Office from Marquette Paper Company, Chicago; $14,054.03 worth of mimeograph paper for Post Office, District of Columbia, from R. P. Andrews Paper Company, Washington, D. C.; $38,220 worth of facing slips for Post Office, District of Columbia, from Boston Paper Board Company, Boston, Mass.; $13,585 worth of corrugated cartons for War, Ordnance, Philadelphia, from Crescent Box Corporation, Philadelphia, Pa.; $21,278.41 worth of mimeograph paper for War, QMC, Chicago, from Barton, Duer & Koch Paper Company, Washington, D. C.; and $11,470.73 worth of bond paper for War, QMC, Chicago, from Eastern Corporation, Washington, D. C.

***BECAUSE** of its remarkably pure and uniform white color Witco Blanc Fixe is winning wide favor in the paper industry. More and more manufacturers are standardizing on it as the completely reliable Blanc Fixe for use in products where uniform opaqueness of coating is*

an important property. Advantageous, too, it's the absence of free alkalinity or acidity, achieved by the unusually rigid methods Witco employs to control its neutrality. The result is that it may be used with confidence in the production of papers for a great variety of purposes. You are invited to send for trial quantities and make tests in your processes. Witco Blanc Fixe is available in 50 and 100 lb. bags and 700 lb. barrels.

WISHNICK-TUMPEER, INC.

Manufacturers WITCO *and Exporters*

New York, 295 Madison Ave. • Boston, 141 Milk St. • Chicago, Tribune Tower Cleveland, 616 St. Clair Ave., N. E. • Dallas, Texas, 610 Dallas National Bank Building • Witco Affiliates: Witco Oil & Gas Company • The Pioneer Asphalt Company • Panhandle Carbon Company • Foreign Office, London, England

BUY DIRECT AND PROFIT DIRECTLY

Charge Tag Agreement

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 7, 1941—The Federal Trade Commission issued a complaint charging the Tag Manufacturers Institute, 370 Lexington avenue, New York, Frank H. Baxter, its secretary-treasurer and executive director, and 31 member companies, with practices in restraint of trade and in violation of the Federal Trade Commission Act in the sale of tags, pin tickets and similar marking and pricing devices. According to the complaint, the respondents are a majority of the country's manufacturers of such tag products.

The complaint alleges that the respondents, acting directly, through their representatives, and in cooperation with each other and with the respondent institute and the respondent Baxter, entered into an agreement, combination and conspiracy to restrict and eliminate price competition in the sale of tag products by fixing and maintaining uniform prices, terms and conditions of sale for their products; by holding meetings under the auspices of the institute to devise methods for such price maintenance, and by a "Tag Industry Agreement."

According to the complaint, the "Tag Agreement" provides:

(1) That each subscribing respondent member send to the respondent Baxter a complete statement of every "general offer" to sell tag products, including available prices, terms and sale conditions, and of every "restricted offer," including prices, terms and sale conditions more favorable to the purchaser than the "general offer" for similar products.

(2) That the respondent Baxter disseminate to all subscribing respondent members the information furnished under the two offers.

(3) That each respondent subscribing member furnish the respondent Baxter with duplicates of every invoice or other shipping memorandum for products sold, and duplicates of all credit memoranda covering rebates.

(4) That the respondent Baxter compile and disseminate to members such information in a manner not disclosing the identity of any one subscriber or the names of any purchasers.

(5) That each subscribing respondent member submit to a "Determination Board" appointed by the respondent members all pertinent records in its possession and permit an examination of such information by the board to determine whether or not such subscribing member has complied with the Tag Industry Agreement rules concerning the furnishing of such information.

(6) That the Determination Board announce its findings pursuant to such investigations; such findings to be accepted by the subscribing members any of whom are to be subject to fines, assessments and liquidated damages in case of breach of rules or regulations.

(7) That each subscribing respondent member pay annually not less than $120 to the respondent Baxter as institute secretary for an "Operating Fund," and not less than $200 into a "Revolving Fund," to provide funds from which operating and investigating expenses and into which fines and assessments are to be paid.

Respondent manufacturer members of the respondent institute are: Acme Tag Company, Minneapolis; Allen-Bailey Tag Company, Inc., Caledonia, N. Y.; American Tag Company, Chicago; American Tag Company of New Jersey, Newark; Atlas Tag Company, Neenah, Wis.; Badger Tag Company, Inc., Random Lake, Wis.; A. C. Baldwin & Sons, Austin, Tex.; Campbell Box and Tag Company, South Bend, Ind.; Central Tag Company, Chicago; Cupples-Hesse Envelope and Litho. Company, St. Louis; Dancyger Manufacturing Company, Cleveland; the Denney Tag Company Incorporated, West Chester, Pa.; Dennison Manufacturing Co., Framingham, Mass.; Eastman Tag and Label Company, San Francisco; Ennis Tag and Printing Company, Ennis, Tex. Haywood Tag Company, Lafayette, Ind.; International Tag and Salesbook Co., Chicago; Keystone Tag Company, West Chester, Pa.; A. Kimball Company, New York City; Marion Manufacturing Company, Atlanta; J. L. May Company, New York; Michigan Tag Company, Grand Rapids; Midwest Tag Company, St. Louis; The National Tag Company, Dayton; the Reyburn Manufacturing Company, Inc., Philadelphia; The Robinson Tag and Label Company, New York; Rockmont Envelope Company, Denver; Salisbury Mfg. Co., Central Falls, R. I.; the Standard Envelope Mfg. Company, Cleveland; Tagcraft Corporation, Lancaster, Pa.; and Waterbury Buckle Company, Waterbury, Conn.

The complaint grants the respondents 20 days for answering the charges.

Government Asks Bids on Waste Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 7, 1941—Government Printing Office will receive bids on May 26 for the purchase of waste paper, paper shavings, etc., for the coming fiscal year beginning July 1, next.

Estimated amounts on which bids will be received include:

400,000 pounds of white and colored shavings from books.

800,000 pounds of white shavings from books and mimeograph papers.

400,000 pounds of white and colored shavings and clean waste.

200,000 pounds of newsprint and wood manila shavings.

300,000 pounds of postal card bristol trimmings.

70,000 pounds of used white monotype keyboard paper.

300,000 pounds of binders board, strawboard and chipboard cuttings.

4,000,000 pounds of paper wrappers from rolls, etc.

900,000 pounds of printed paper waste; free from ground wood.

500,000 pounds of discarded publications.

8,000 pounds of wrapping twine and rope from bundles.

15,000 pounds of waste and scrap book cloths.

American Wringer Co. Elects Officers

At a meeting of the board of directors of the American Wringer Company, Inc., Woonsocket, R. I., George R. Keltie, vice-president and general manager was elected president and treasurer to succeed Harold T. Merriman, deceased. Harry Schlosser, secretary and assistant general manager, was elected vice-president.

Paper Club to Meet

The annual meeting and election of the Paper and Twine Club, together with its annual Golf Tournament will be held at the Spink-Wawasee Hotel, Lake Wawasee, Ind., on June 5, 6, 7, and 8, 1941.

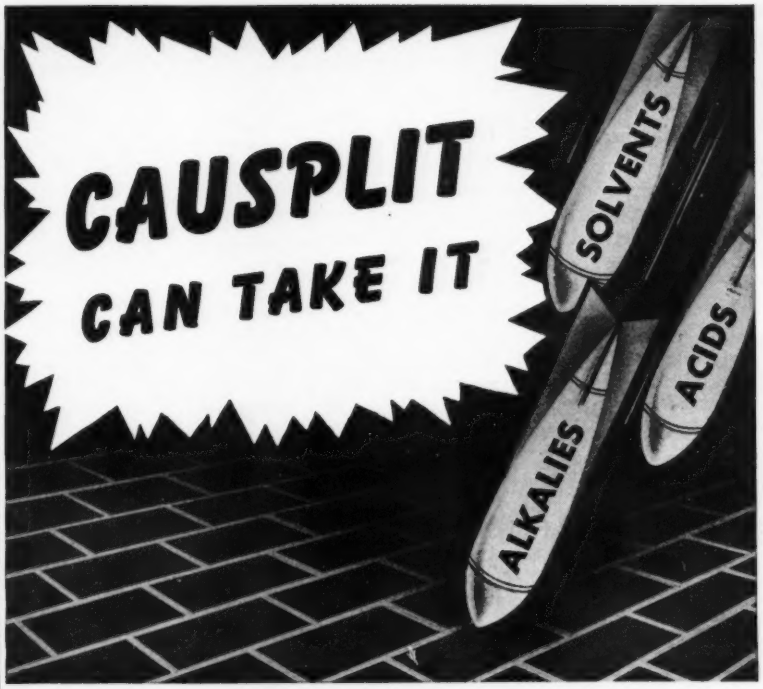
A different and valuable feature of the meeting this year, to both merchants and manufacturers, is the fact that the National Paper Trade Association is cooperating and, at the same time, will hold its quarterly regional meeting of Wrapping paper merchants at Lake Wawasee. The regional meeting will open its session at 1:00 P.M. on Thursday, June 5, 1941, in the Convention Hall of the Hotel and this announcement will constitute a joint invitation of the Paper and Twine Club and of the National Paper Trade Association for all jobbers to attend this regional meeting whether you are a member of Paper and Twine Club or not, and whether a member of the National Paper Trade Association or not. The regional meeting will continue through the afternoon of June 5 and will open its session again at 9:00 A.M. on Friday, June 6, and, all jobbers are invited to attend these sessions. A notice will also go out from the National Paper Trade Association to its own members, inviting them to be present. At these two sessions the usual, very practical reports and discussions will be held.

There will be an informal social get-to-gether of manufacturers and jobbers on the evening of June 5.

Starting at 1:00 P.M. on Friday, June 6, the annual Golf Tournament will get under way, with a big dinner for all those in attendance in the main dining room of the Hotel on the evening of June 6.

On Saturday morning, June 7, the annual meeting and election of The Paper and Twine Club will be held, which is open to all manufacturers and merchants who are in attendance whether members of the Club or not. At this session, the president and secretary will make their report.

On the afternoon of Saturday, June 7, the annual Golf Tournament will continue, followed by a dinner in the evening for all those present, when the prizes will be awarded and music and entertainment provided.



CAUSPLIT is a new quick-setting cement with amazing chemical and mechanical resistance. It withstands a wide range of strong acids, alkalies and solvents at temperatures up to 350°F.

In addition, it is easy to handle and free from bothersome acid ingredients. Extensive tests have proved Causplit to be first-rate for corrosion-proof construction of industrial equipment. Actually, Causplit is a considerable improvement over Asplit, which has been widely used in many industries for more than 7 years.

CHEMICAL PLANTS: Causplit is the ideal cement not only because of its resistance to hydrofluoric, phosphoric and other strong acid conditions, but also because it is unaffected by alkalies, such as caustic, soda ash and hypochlorites. Causplit naturally stands up under the salts of alkalies and acids in the linings of equipment and floors.

PULP AND PAPER MILLS: Used in pulp digesters and bleaching systems to withstand both acids and alkalies. For instance, it is unattacked by sodium sulphite, sulphurous acid, chlorine, as well as hypochlorite, caustic soda and soda ash. Its characteristics enable it to withstand both mechanical and thermal shocks. Here again Causplit can be used for both tank and floor work.

STEEL MILLS: Causplit is used in the equipment for both acid and alkali cleaning of steels. It is not attacked by hydrochloric and sulphuric acids in the strengths used in the steel industry. It differs from most other acid-proof cements in that it is also resistant to hydrofluoric acid, which is used in the stainless steel industry.

Write or wire us for FREE TEST KIT, including samples, booklet of information and test data showing Causplit's resistance to various acids, alkalies and solvents. Pennsylvania Salt Manufacturing Co., Widener Bldg., Philadelphia, Pa. — New York • Chicago • St. Louis • Pittsburgh • Wyandotte • Tacoma.

PENNSYLVANIA SALT
MANUFACTURING COMPANY
Chemicals

Ohio TAPPI Discusses Dispersion

The Ohio Section of the Technical Association of the Pulp and Paper Industry assembled at the Hotel Manchester, Middletown, Ohio on May 1, 1941, Harry C. Fisher presided as chairman.

At the conclusion of the meeting, Mr. Fisher introduced some of the men present to the group. Among these men was L. A. Youtz, for many years Professor of Chemistry at Lawrence College and a former member of the faculty of The Institute of Paper Chemistry.

The program for the evening consisted of the showing and description of a Technicolor film *Modern Pigment Dispersion* by Kent Sprinkel of the Hilton Davis Chemical Company of Cincinnati.

The most interesting portion of the film dealt with the "flushing process" in which the Hilton Davis Company pioneered. In this process the proper vehicle is added to the wet color cake or pulp, and by means of special wetting and dispersing agents the water is displaced from the color by the vehicle. The result of this treatment is an ink or paint base in which the pigment is dispersed. Mr. Sprinkel's talk was received with much interest, as evidenced by the large numbers of questions asked of the speaker and his co-workers at the conclusion of the film.

Those present included: T. Agronin, Charles A. Ault, M. L. Barker, William Beckett, William Boast, Lloyd S. Bovier, Duncan S. Brown, Paul R. Bucheit, Howard Buechler, John E. Burdsall, Philip S. Cade, Fred Chambers, James B. Clarke, Harry Cunningham, Thage Dahlgren, P. E. Daley, Jack Dickson, E. H. Ellis, Harry C. Fisher, Leo Fleischer, Valentine Friedrich Jr., L. J. Gaede, Colin Gardner Jr., K. P. Geohegan, O. P. Gephart, Edward Geran, M. E. Ginaven, D. J. Goodman, E. A. Greer, Albert Grunder, Harry Hadley, W. H. Haines, W. H. Hall, J. A. Hamm, Jr., H. H. Harrison, O. W. Hein, E. A. Hoey, George B. Hughey, Albert Kind, Harold C. Koch, Arthur Kjellstrand, Homer A. Latimer, Harold C. Leighton, George K. Losher, Edward Lum, R. Miller, Roy Murbach, J. A. Nicklis, Lester Oyler, D. D. Patrick, Herb Randall, William Reigers, Harold Reuben, James F. Rice, Harry D. Roeder, Carl D. Roess, James E. Rooch, Charles Rybolt, Arthur J. Schroeder, George Skillman, R. H. G. Smith, Brainard Sooy, Walter E. Sooy, Claude A. Sorg, Kent Sprinkel, G. H. Suhs, P. A. Talbot, J. H. Tate, William J. Trimbach, Stanley Trossett, Willard I. Upson, H. Waffenschmidt, Robert R. Weber, W. A. White, Jr., A. J. Wildman, Myron Wittmer, H. F. Woody, Charles J. Wright, D. M. Yost, L. A. Youtz, and M. A. Youtz.

Brazil Imports More Pulp

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., May 7, 1941—Brazilian imports of chemical pulp during 1940 totaled 575,000 metric tons, the American embassy at Rio de Janeiro reported. In the preceding year, imports were 532,000 metric tons.

The trend in the country to replace imports from Europe with domestic products is being speeded by establishment of a wood pulp plant in the Southern Parana region to turn out both chemical and mechanical pulp, and a newsprint mill to produce its own pulp. The newsprint mill, when it starts operations will be Brazil's first, the embassy stated. Newsprint imports averaged between 40,000 and 45,000 metric tons annually.

Paper and Pulp Supply

The Advisory Committee for the Pulp and Paper Industry, 122 East 42nd street, New York, in its report issued April 9, 1941, presented an analysis of the pulp and paper industry in reference to the probable requirements of national defense.

The report was prepared with the assistance of the American Paper and Pulp Association, its affiliated divisions, the National Paperboard Association, and the Newsprint Manufacturers Association of the United States.

From the tabulation given, which is based upon the best information available to the industry, it is indicated that the minimum 1941 pulp and paper supplies are adequate to meet total maximum estimated requirements, including exports for the current year.

PROBABLE UNITED STATES 1941 MINIMUM NET PAPER PULP SUPPLY AND ESTIMATED MAXIMUM UNITED STATES WOOD PULP REQUIREMENTS AS EXPRESSED IN WOOD PULP EQUIVALENTS FOR GROSS PAPER DEMAND

(Figures in Thousands of Tons)

	Sulphite		Sulphate		Total Sulphite & Sulphate	Soda & Special Chemical	Total Chemical Grades
	Bleached	Unbleached	Bleached	Unbleached			
U. S. Capacity, normal as of January 1, 1941	1,514	1,046	697	3,377	6,634	771	7,405
Additional Capacity installed for operation during 1941—U. S.	12	39	118	28	197	4	201
1940 Imports from Canada	195	219	58	69	541	11	552
1941 Excess Imports from Canada	106	370	13	42	531	25	556
	1,827	1,674	886	3,516	7,903	811	8,714
Estimated 1941 U. S. exports	60	60	16	100	236	12	248
Probable minimum net 1941 supply	1,767	1,614	870	3,416	7,667	799	8,466
Estimated Pulp Equivalent of O.P.M.'s estimated 1941 Paper Demand, including exports	1,744	1,604	695	3,742	7,785	696	8,481
* Balance, probable minimum net supply as compared with total estimated 1941 demand requirements:							
Surplus	23	10	175	....	....	103	....
Deficit	....	....	....	326	118	....	15

* Does not include as of January 1, 1941:

1—Stocks of own pulp for own use by pulp producing mills	100
2—Stocks of purchased pulp for own use by pulp producing mills	105
3—Stocks of purchased pulp available to Converting Mills	495
	700

With respect to the requirements shown in this Table, it should be recognized that waste paper and fibrous materials other than wood pulp may be substituted for wood pulp to a great extent. Considerable quantities of waste paper, rags, jute, old rope, etc., can be made available for such substitutions. No problem exists with respect to groundwood pulp, the capacity for which greatly exceeds any anticipated requirements. This will make available additional fibrous raw materials for substitution if necessary. In addition there is a reserve pulp productive capacity in Canadian newsprint mills not taken into account in these calculations exceeding 400,000 tons of unbleached sulphite and 1,000,000 tons of groundwood per year which can be made available.

Indianapolis Improves

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., May 5, 1941 — Continued improvement in the paper market here was noted last week, with all lines, apparently, benefiting from better economic conditions. However, there is no indication of a skyrocketing price situation, but prices are very firm and local jobbers believe if any increases are made, they will be of a fractional nature and not sufficient to scare the buyer.

Building papers continue to be the really bright spot in the local demand. It is very probable that volume this year will exceed that of last if the first four months are any criterion. Immediately following the holidays, building paper resumed its demand and with the comparatively open winter and early spring, demand has jumped faster than it did a year ago. Dealers, thus far, have had no difficulty in getting deliveries, but any curtailment of the product because of the defense situation will be immediately felt.

The fine paper field also is moving nicely. There is a good demand for all grades and prices are firm. The entire Central Indiana area seems to be in the market for fine paper.

Demand has opened for summer specialties and before the end of this month is expected to be in full swing. Prices are a trifle higher than they were a year ago.

Newsprint demand is improving and volume is better than a year ago. Lineage is larger and this applies not only to the metropolitan papers of the state, but extends to the country weeklies.

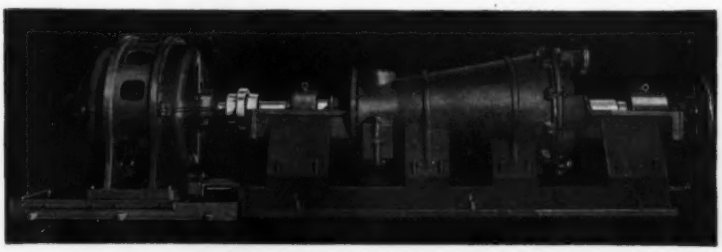
Kraft is in good demand and the container volume is improving. Container men say their production is larger than last year, some of the increase being due to the defense program.

Local jobbers say the rag demand is somewhat off. Mills are making inquiries, but prices show little improvement.

Demand for paper stock also is slow with prices on better grades holding firm, but the lower grades being somewhat weak.

NEW PRODUCTION RECORDS in pulp and paper mills are putting extra demands for speed and efficiency upon every piece of equipment. In times like these the dependability of Appleton Jordans is fully demonstrated. They are built to maintain original efficiencies and to guarantee correct operation under severe service conditions. Appleton Jordans have introduced many engineering advancements contributing to better performance and a more definite control of the refining process. The construction features of the modern Appleton Jordan are the result of progressive ideas applied with a thorough knowledge of jordan requirements and operating conditions and problems. There is an Appleton Jordan for all grades of stock, with fillings to fit the job.

THE APPLETON MACHINE COMPANY
Appleton, Wisconsin



APPLETON
JORDANS

Paper Merchants To Have Outing

The 15th annual summer outing of the Southeastern Paper Trade Association will be held at Virginia Beach, Va., on June 20 and 21, this year. The high spot, of course, is the golf tournament, 36 holes, 18 on Friday, 18 on Saturday, which will be played over the Princess Anne Country Club course. In addition to the tournament there will be many other amusements for those who do not play golf, such as surf bathing, swimming in indoor pool, horseback riding, fishing, and tennis, and at night dancing at the Cavalier Beach Club to the music of famous name bands.

Each year the attendance at this meeting increases and the prospects are good for this year's attendance breaking all past records.

The membership of the Southeastern Paper Trade Association comprises paper merchants, wrapping and fine, located in Virginia, North Carolina and South Carolina.

The Journal in Many Lands

The following letter and inclosure sent us by Frank E. Ferrige now with the Thilmany Pulp and Paper Company, Kaukauna, Wis., is self-explanatory and is presented because of its human interest:—

Kaukauna, Wis., April 4, 1941

Editor PAPER TRADE JOURNAL:

In your recent issue of the PAPER TRADE JOURNAL of February 27, page 4, there appeared a letter from the Cray Valley Mills which was of very great interest to me. For your information, I used to work in these mills some 18 years ago and I know the man in question very well. I am enclosing a letter they gave me on leaving their employ, which I prize very highly and request that you return this to me as soon as possible. I am also enclosing a copy of a letter I recently wrote to the Cray Valley Mills which I think will interest you greatly.

FRANK E. FERRIGE

Mr. Ferrige's letter in part to T. H. W. Nixon of the Cray Valley Paper Mills follows:

"No doubt you will hardly remember me, but I used to work in your mills and left in 1923 to come to the United States and have been in the paper business ever since. I have had little or no news of the Cray Valley Mills since that time, but imagine my surprise about a week ago when I opened my weekly PAPER TRADE JOURNAL and saw a letter heading from your mill stating that Lieut. Col. William Nash, O. B. E. is a prisoner of war in Germany and asking that the Journal be sent to him. I sincerely hope he is well and will get some good from the Journal which no doubt will be sent to him. I would be glad to hear of any news you may have in regards to his welfare and also of any new developments of the Cray Valley Mills."

Plans for Northwest Meeting

The plans for the spring meeting of the Northwest Division of the American Pulp and Paper Mill Superintendents' Association at Marinette, Wis., May 23 and 24, are rapidly taking form. There will be a stag luncheon at 12 o'clock noon on the opening day, Friday, May 23, in the Crystal Room of the Hotel Marinette. At the opening session in the Crystal Room the following papers will be presented:—Present and New Developments of Reels, Beloit Iron Works; Modern Practice in Design and in Construction of Pressure Vessels, H. A. Schmitz and H. Zerbe of the A. O. Smith Corporation; How Savings Pay for Instrument Control, A. H. Stanton of Mason-Neilan Company; Operating Methods, Cost, and Results of the Dorr Water Filter, the Dorr Company.

There will be a stag luncheon at 7:00 P.M. with special entertainment at the Silver Dome Night Club.

On Saturday at 9:30 A.M. there will be a round table discussion and a film will be shown demonstrating Du-Gas Fire Fighting Equipment by the Ansul Chemical Company of Marinette, Wis. At 12:00 noon there will be a stag luncheon at the Riverside Country Club. At 1:30 $.ffl. there will be a golf tournament at the Riverside Country Club, Menominee, Mich., and a Skeet Shoot at Graby's, River Road, Marinette, Wis. Mill visits may be made to the following plants:—Badger Paper Mills, Peshtigo, Wis.; Escanaba Paper Company, Escanaba, Mich.; Hoskin Paper Company, Menominee, Mich.; Falls Pulp and Paper Company, Oconto Falls, Wis.; Southern Kraft Corporation, Marinette, Wis. At 6:30 P.M. there will be a dinner dance in the Crystal Room of the Hotel Marinette.

The ladies program includes a bridge luncheon in the Riverside Country Club, Menominee, Mich., and a theater party on Friday. On Saturday the ladies will visit the WMAM radio station at Marinette, Wis., and the Marinette Knitting Mills. There will be a luncheon in the Crystal Room of the Hotel Marinette and yachting on Green Bay in the afternoon. There will be a dinner dance at 6:30 P.M. in the Hotel Marinette.

Delaware TAPPI Discusses Starches

The last meeting of the present season of the Delaware Valley Section of the Technical Association was held at the Engineers Club, Philadelphia, Pa., on Friday, May 2nd. E. J. Albert presided as chairman.

Mr. Strasser of the Stein-Hall Manufacturing Company presented a paper on Starches. It was stated that, in general, corn starch is as effective in the beater as tapioca, but that from 1½ to 2 times as much may be required. Raw starch is the most efficient for any purpose, but modification is frequently required in order to obtain a usable material in regard to viscosity, solids, etc. Either tapioca or corn starch can be modified to obtain the same effect, although the degree or type of the modification may be different for the two. As with starch in the beater, usually more corn is required than tapioca when using the modified types.

Among those present were: Edw. J. Albert, J. R. Atwater, Paul C. Baldwin, A. G. Barber, D. E. Bates, R. M. Bates, R. W. Beales, A. L. M. Bixler, S. W. Blanchard, Alan R. Boyd, F. W. Brainerd, S. G. Briscoe, William J. Burke, D. D. Cameron, Theodore M. Chemerys, J. M. Chesnutt, M. Connor, A. M. Cooper, G. I. Cooper, L. W. Crouse, D. S. Dieffenderfer, Paul Dieffenderfer, R. H. Dillinger, Edward Engel, H. J. Farra, George A. Farrah, James H. Fritz, R. M. Gavin, J. D. Gercke, Emerson N. Glauner, Philip H. Goldsmith, Jesse F. Good, W. C. Griffin, H. R. Halfmeier, Wilbert H. Hannes, Lois V. Hans, A. M. Hartley, C. W. Hoffman, H. F. Hoffmann, Harry Hulmer, J. Frank Key, C. E. Kinney, L. O. Koons, J. J. Lafferty, George J. Lane, Willard H. Lapp, P. M. Loddengaard, G. B. Martin, M. Craig Maxwell, F. J. McAndrews, Louise E. McGrath, Alex. McInnes, Jr., J. A. McQuade, Lewis B. Miller, Fred T. Morber, Walter B. Morehouse, A. H. Nadelmann, L. Newman, J. F. Nicholas, M. B. Pineo, Walter P. Quinn, Glen T. Renegar, G. A. Ritter, Charles W. Rivise, John Roslund, Claude J. Ryder, J. Carl Schmidt, G. L. Schwartz, Clarence A. Seibert, Edw. A. Shallcross, Henry C. Speel, H. M. Spurlin, J. P. Strasser, Geo. M. Suydam, Harvey F. Volk, G. Clifton Walton, and A. E. Waugh.

Speaks on Hammermill Offset

BOSTON, Mass., May 5, 1941—Harold Peckham, of the Hammermill Paper Company, gave a talk on Hammermill Offset at a sales meeting held Saturday morning at the office of Carter Rice & Co. Corp., Frank H. Winter, sales manager, presided.

N.E. Paper Box Men Meet

[FROM OUR REGULAR CORRESPONDENT]

PROVIDENCE, R. I., May 5, 1941—Howard S. Scholes, of the Taylor Box Company, Providence, was re-elected president of the New England Paper Box Manufacturers Association at the Annual Convention of the organization, held April 30 at the Providence Biltmore Hotel. Maurice B. Ullman, The Strouse, Adler Company, New Haven, Conn., was chosen vice-president, and Thomas Casey Greene, 49 Westminster street, Providence, again re-elected secretary-treasurer. Directors — A. M. Bond, Consolidated Paper Box Company, Somerville, Mass.; Lester D. Friend, Friend Box Company, Danvers, Mass.; John H. Adams, Casco Paper Box Company, Portland, Me.; Dana C. Huntington, Dennison Manufacturing Company, Marlboro, Mass.; Oscar Carnevale, Hope Paper Box Company, Providence; Roger H. Mills, Inc., Bristol, Conn., and Fred H. Hawkins, The Mason Box Company, Attleboro Falls, Mass. The slate, presented by Arthur Shaw, of Meriden, Conn., in behalf of the nominating committee, was unanimously elected.

At a meeting of the supply men's group, first on the program, Oscar Carnevale gave a brief address on what a box manufacturer expects from supply men in connection with the promotion and sale of their goods.

Phil Liner, of National Adhesives, was unanimously elected liaison officer to serve with the board of directors the coming year.

At the general meeting, called to order at 3 o'clock, William R. Kreeger, secretary of the National Paper Box Manufacturers Association, told the members what had been done by the National Association in regard to the wage and hour law. Charles K. Shaw, president of the National Association, told what the organization had been doing the last year and a half and what work was contemplated.

W. Clement Moore, tax and cost consultant of the National Association, gave an excellent talk.

Arthur C. Babson, vice-president of Babson's Reports, Inc., addressed the delegates on "The Business Outlook."

Walter P. Miller, with Mr. Davis, of Philadelphia, explained the advertising program of the National Association and issued a brochure to all the box manufacturers.

There was a most enjoyable cocktail hour at 5:30, with music, and a banquet at 7 o'clock. After the dinner, Paul R. Ladd, manager of the Providence Chamber of Commerce, gave a word of greeting to the delegates, and Harry E. Roden, publicity director of the National Association, spoke in regard to the coming National Convention in Atlantic City.

A floor show of about an hour and a half followed.

Delegates were present from New York, Pennsylvania, New Jersey, and the six New England States.

To Visit Strathmore Paper Co.

BOSTON, Mass., May 5, 1941—The Boston Club of Printing House Craftsmen is to visit the mills of the Strathmore Paper Company at West Springfield, Mass., June 14.

For the MODERN BAG PLANT
⅛ Bbl. Combination for Valve and Satchel Bottom Bags 16" to 24" wide, 22" to 46" long.
Patented Photo-electric Side Register for guiding traveling web.
Intucked Multi-wall Tuber for Sewed Valve Bags.
One or two wall Side Seam Tuber with Cross Pasters and Side Register Control.
Heavy Duty Multi-wall Tuber, built in cross pasters and automatic compensator.
Pressor Conveyor for Bottomers making multi-wall pasted bottoms.
Combination Bottomer for pasted bags 17½" to 28" wide, 22" to 60" long, 2½" to 9" wide bottoms.
500 Tubes per minute, double cut-off, center or side seam, right angle delivery.

A full line of smaller sizes Tubers and Bottomers — Flat and Square Bag Machines. Also manufacturers of Paper Mill Machinery, Cylinder and Fourdrinier — Jordans — Pumps — Rotary Cutters — The Famous "UNDERCUT" Paper Trimmer.

The SMITH & WINCHESTER Manufacturing Company
SOUTH WINDHAM CONNECTICUT

PAPER
TRADE JOURNAL
Title Reg. U. S. Pat. Off.
Henry J. Berger
EDITOR

Vol. 112 May 8, 1941 No. 19

COMING EVENTS IN PAPER INDUSTRY

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

American Pulp and Paper Mill Superintendents Association, Twenty-second Annual Convention, Poland Spring House, Poland Spring, Me., June 17-19.

Technical Association of the Pulp and Paper Industry, Fall Meeting, Ann Arbor, Mich., September 16-19.

PRICE TENDENCIES

With the cost of living some 50% below the peak of 1917-1920, government officials appear reasonably confident that an excessive rise in prices can be prevented. One of the interesting elements in the current situation is the record-breaking amount of money in circulation, the total now being $9,000,000,000, or $4,000,000,000 more than the highest total recorded in 1929, and about $1,500,000,000 more than recorded for 1940. Although this huge increase in the supply of money has not increased inflation to exert any harmful result thus far, it does create a potential force in that direction. Thus, the optimism of government officials is not shared by all economists. The threat of an undesirable degree of inflation present in huge government expenditures is cited as a potential danger of upward spiraling prices. It has been pointed out that as living costs are beginning to rise under national defense spending, the sharp upward trend in business activity may result in a boom that will be difficult to control.

In commenting on price tendencies, the April 28 issue of *The Guaranty Survey*, published by the Guaranty Trust Company of New York, directs attention to the fact that, "The establishment of an Office of Price Administration and Civilian Supply in the national defense organization, followed within a few days by an order 'freezing' steel prices at the level that prevailed during the first quarter of this year, reflected the sharp increase in public interest and concern in the outlook for prices. This heightened awareness of the price situation is a result of several recent developments with an important bearing on possible future price trends. Prices of a number of important commodities have shown a more pronounced upward tendency than at any other time since the first few weeks of the conflict. The price advance has been accompanied by widespread labor disturbances, sweeping increases in wage rates, renewed demands for increased aid to agriculture, and the appearance of shortages in marine shipping."

In discussing the problem of stabilization *The Survey* says in part: "These developments have drawn attention to the general problem of price stabilization and have resulted in official measures to prevent excessive advances in prices of several specific commodities. Whether the techniques already developed will be sufficient to maintain the desired price stability or whether broader and more drastic methods will be required is a question that seems to be receiving increasingly serious study. The question is one of vital importance, not only because of the possible effects of price disturbances on industrial efficiency but also because of the unfortunate consequences of such disturbances on social conditions and public morale and the tremendous losses resulting from the subsequent readjustment to lower levels."

In its analysis of the movements of price groups, the monthly comment says in part: "Such information as is available concerning relative changes in prices of different groups of commodities tends to bear out the view that shipping difficulties and fluctuations in exchange rates have been factors of primary importance in determining price movements. In Great Britain, for example, wholesale prices of foods (a category that includes many imported products) have risen 61%, while the average advance in industrial products has been more moderate, amounting to 49%. A somewhat different situation exists in the United States, where some of the principal imports, such as sugar, coffee and silk, come from countries outside the conflict zone and are not subject to such serious transportation difficulties as exist elsewhere... Even in the United States, where war-time influences are much less pronounced than in most foreign countries, the disturbing effects of these influences are clearly apparent in the wide divergence of price movements."

In considering the factors in the price outlook, *The Survey* states in part that, "The labor problem is gaining increasing recognition as a vital factor in the price outlook. Such disturbances as have been witnessed with growing frequency in defense industries in the last few months threaten established price relationships both by exerting a strong upward pressure on the wage level and hence on the level of costs and by limiting the output of vitally needed commodities and thus disturbing the equilibrium of demand and supply. To some extent, the increase in costs resulting from higher wage rates may be absorbed by a greater volume of output; but this can be true only in so far as that volume is maintained. And the effect of strikes in limiting volume is likely to spread far beyond the industries immediately affected, since the

product of one industry is, in many cases, a raw material of another. A strike in a comparatively small plant may paralyze operations over a much wider industrial area."

In asserting that price control is a difficult problem, the article says that, "In most discussion of the general price outlook, the super-abundant supply of many farm products, the huge industrial capacities and the large volume of unemployment have been emphasized as reassuring factors. These conditions still exist: but they have not prevented the appearance of a number of marked price advances in recent weeks, nor have they forestalled developments in the fields of agriculture, labor and shipping that contain possibilities of further price disturbance. If such developments continue, the problem of price stabilization may be expected to receive more serious attention. The Government has broad powers of emergency price control, both direct and indirect. But experience is proving once more, as it has so often proved in the past, that the prompt, wise and effective use of such powers is easier in theory than in practice."

Industrial Reference Service

As a new service to the paper and pulp industry, the Department of Commerce has made available the first of a series of monthly reports furnishing an analysis of the latest available data of the industry. "Industrial Reference Service, Part 4, Forest Products" for April contains a preliminary review of the industry for the month of March, indicating that new paper orders at mills and wholesale houses increased, with all types affected. The backlog of orders continued to rise during the month. Paperboard orders in the second week of March were but slightly behind the all-time peak reached in September, 1939. At that time, orders were largely speculative inventory purchases, while at present orders are believed to represent expanded consumption. Orders placed for paperboard during March were the highest ever recorded for any comparable month.

An added feature of the new paper and pulp industry service is a review of the status of various bills in Congress affecting the economy of the industry. Discussion in the current issue includes H. J. Res. 15, a Bill to "investigate the apparent monopolistic purchasing of pulpwood"; H. R. 99, the "Cotton Pulp Consumption Act"; H. R. 3458, concerning establishment of a Forest Credit Bank; H. R. 3849, providing for the regulation of privately owned forest lands, and H. R. 3850, which has the same objectives.

Matthew J. Burns in New Office

WASHINGTON, D. C., May 7, 1941—Matthew J. Burns, former president of the International Brotherhood of Paper Makers, A. F. of L., and labor adviser for the paper industry in N.R.A., joined the Office of Production Management labor division last week.

He will develop plans for continuing employment in plants where production has been curtailed by establishment of priority orders on raw materials and tools.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks, 1941		Corresponding Weeks, 1940	
March 22	91.8	March 23	82.8
March 29	94.0	March 30	82.3
April 5	92.9	April 6	79.4
April 12	94.9	April 13	81.8
April 19	94.5	April 20	86.5
April 26	*98.3*	April 27	89.4

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1940	89.1	84.7	82.3	84.3	90.0	92.1	85.3
1941	85.1	89.4	*92.1*	...	...	...	...

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1940	85.1	81.5	85.5	84.9	80.9	85.6
1941	...	...	...	...	...	...

COMPARATIVE YEARLY SUMMARIES

	1935	1936	1937	1938	1939	1940	1941
Year to Date..	68.1	77.4	89.6	67.5	80.2	85.3	*90.2*
Year Average..	70.0	80.4	79.8	71.5	83.4	85.6	...

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS †

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	62	67	67	70	69	70	69	75	78	82	80	74	72
1937	80	86	86	88	85	77	66	74	69	65	55	45	73
1938	54	60	61	57	58	56	57	66	66	70	65	59	61
1939	60	67	71	69	64	67	63	72	74	84	81	71	70
1940	71	70	69	70	76	79	72	74	72	79	77	71	73
1941	75	81	*82*	..	..	..	..	..	..	..	..	..	..

Week ending Mar. 22, 1941—82
Week ending Mar. 29, 1941—84
Week ending Apr. 5, 1941—83
Week ending Apr. 12, 1941—85
Week ending Apr. 19, 1941—78
Week ending Apr. 26, 1941—*84*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

O. & M. Paper Co. Ltd. Formed

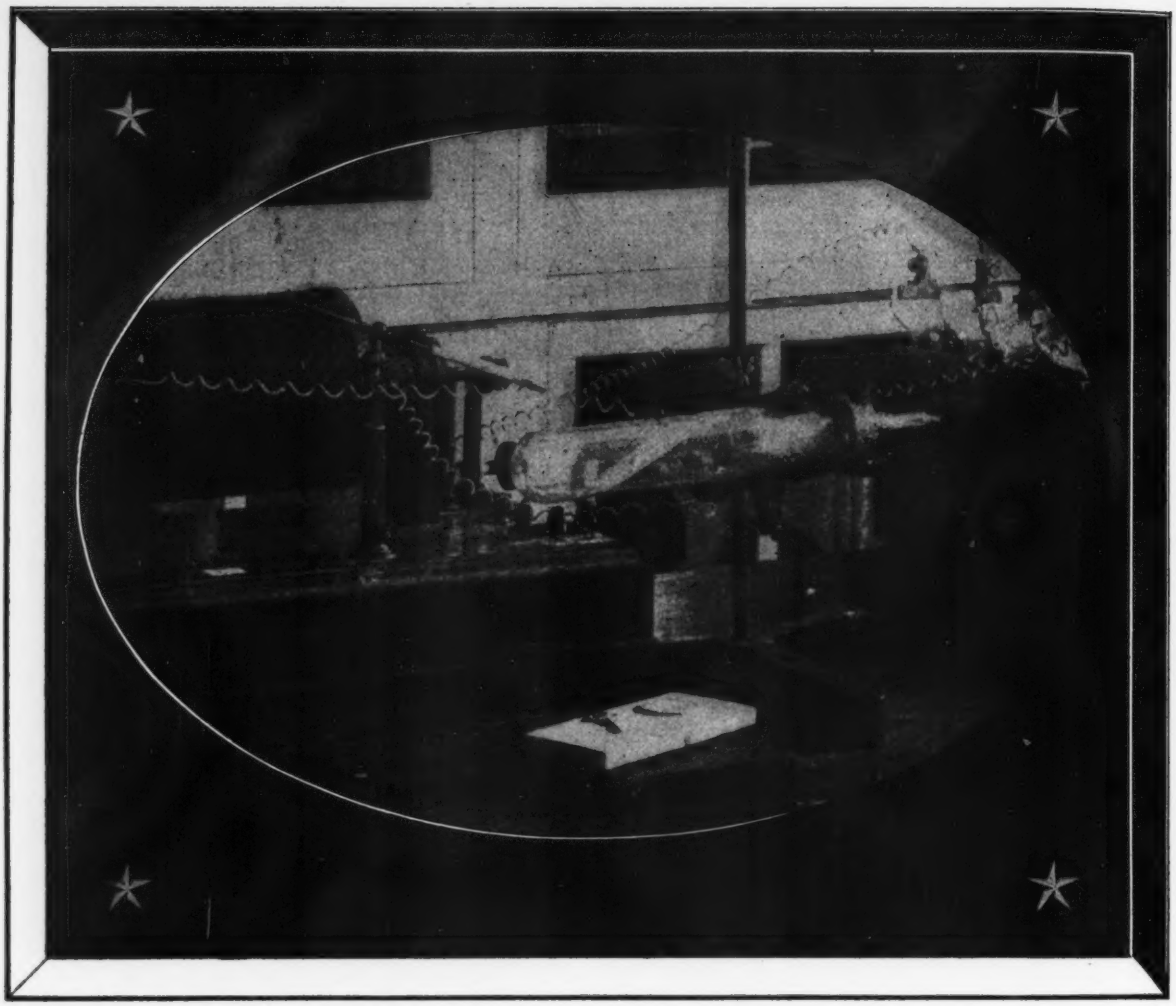
Formation of the Ontario-Minnesota Pulp and Paper Company Limited under Letters Patent granted under date of April 28 was announced by R. H. M. Robinson, President of Minnesota and Ontario Paper Company. The Ontario-Minnesota Pulp and Paper Company Limited, a Canadian Company, is an outgrowth of the reorganization of Minnesota and Ontario Paper Company, which has been under trusteeship since February 28, 1931, and which was reorganized effective as of March 1, 1941.

The Ontario-Minnesota Pulp and Paper Company Limited is an amalgamation of Kenora Paper Mills, Limited, the Keewatin Power Company, Limited, the Keewatin Lumber Company, Limited, the Fort Frances Pulp and Paper Company, Limited, the Ontario and Minnesota Power Company, Limited, and as such will own the properties and conduct the business of the companies so amalgamated.

Following are the directors of the newly organized company: R. H. M. Robinson, C. T. Jaffray, J. B. Faegre, Shirley S. Ford, R. W. Andrews, and R. D. Main, all of Minneapolis, and Robert S. Waldie, Toronto, Ontario.

The officers of the company are R. H. M. Robinson, president; R. W. Andrews, senior vice president; C. T. McMurray, vice president, and R. J. Henderson, vice president, all of Minneapolis; Donald McLeod, Kenora, Ontario, vice president; R. D. Main, secretary-treasurer, and F. J. Hickling, comptroller, both of Minneapolis.

The company will operate as two divisions—Kenora Division, Kenora, Ontario, of which Ralph Bateman is general manager, and the Fort Frances Division, Fort Frances, Ontario, of which Clarence Larson is general manager.



They Started Something!

THE DISCOVERY of the X-ray with its amazing properties opened a new era in medical science and in industrial progress. It made possible striking contributions to human welfare, through its use in studying bone fractures, examining tissues and organs, and treating diseases.

Industry soon found in the X-ray a tool of even greater utility both for the inspection of products and for the uncovering of new basic knowledge of materials. The examinations of castings and welds to detect the presence of hidden defects; the study of internal stresses in rapidly moving objects; the development of the entire field of diffraction analysis, which has cast new light on physical and chemical changes in a wide variety of materials: these are among the advances made possible in industry by the utilization of the X-ray.

When the engineers of EBG first made Liquid Chlorine commercially available in America, they, too, made striking contributions to human health and to industrial progress. Municipalities found in EBG Liquid Chlorine a highly effective means of preventing the spread of water-borne diseases, through its use in purifying water supplies. Today EBG Liquid Chlorine is constantly expanding its utility in the newer field of sewage sterilization. And in industry, the use of EBG Liquid Chlorine as a bleaching agent enabled the manufacturers of paper and textiles to set new standards of efficiency, quality, and economy in their manufacturing processes.

The first cylinder of Liquid Chlorine made by EBG in 1909.

You can profit by the *extra* experience of EBG engineers in the manufacture and servicing of Liquid Chlorine.

ELECTRO BLEACHING GAS COMPANY
Main Office: 60 East 42nd Street, New York, N.Y.
Plant: Niagara Falls, N. Y.

EBG Liquid Chlorine
FIRST IN THE COUNTRY

PAPER TRADE JOURNAL

Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Copes Consistency Control*

By Don Allshouse[1]

Abstract

The consistency control, a compact unit applicable to any location in the mill, utilizes viscosity as a measure of consistency. Viscosity changes cause changes in torque required to rotate feeler disks cross-sectioning entire stock flow, and torque changes, counterbalanced for desired consistency, are used to operate pilot valve controlling water flow to relay actually operating dilution valve. Dilution water is admitted to stock through holes in vertical distributor pipes so that stock is thoroughly cross-sectioned with dilution water. The dilution point is less than 3 feet from the control point to reduce time lag and make control more accurate.

The desired consistency was 3.0% in one mill. The average maintained was 2.98%; the range was from 2.8 to 3.1%.

The control is an automatic device designed to dilute stock to a desired consistency. It cannot increase the consistency of the stock.

Viscosity

The control is mounted on two steel channels as shown in Fig. 1. These are set on top of an open box at the point where the consistency is to be controlled. There is a unit to detect changes in viscosity which is used as the measure of stock consistency. This is connected to the valve controlling the flow of dilution water so that this flow increases or decreases in proportion to any increase or decrease of the stock viscosity. The unit for detecting changes in viscosity is simply a series of flat, smooth, circular disks rotated in the stock stream by an electric motor at a constant speed of about 600 r.p.m. At any given moment, one half of each disk is moving in the same direction as the stock stream, while the other half is moving against the flow of stock. This tends to cancel any effect from change in velocity of the stock.

The consistency-detecting apparatus is not used as a mixing device, because it would affect accuracy of control. The disks are simply rotated in the stock as feelers. To assure response to the average consistency of the fluid passing the control, 4 disks are used. They are spaced to cover a wide enough area to permit the entire volume of stock being controlled to pass through the unit. This gives greater over-all accuracy than if only a sample of the stock were measured. The resistance to rotation of the disks depends on the viscosity of the stock. Any variation

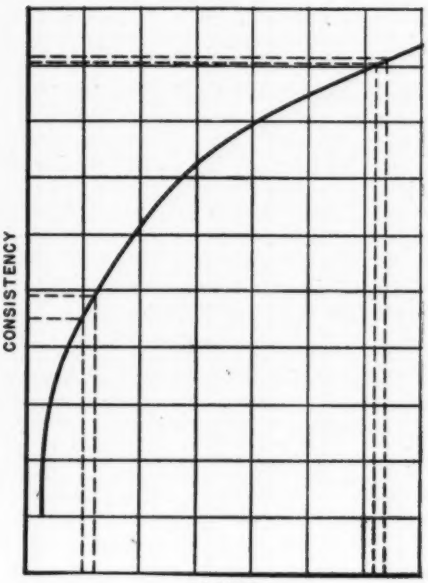


FIG. 2

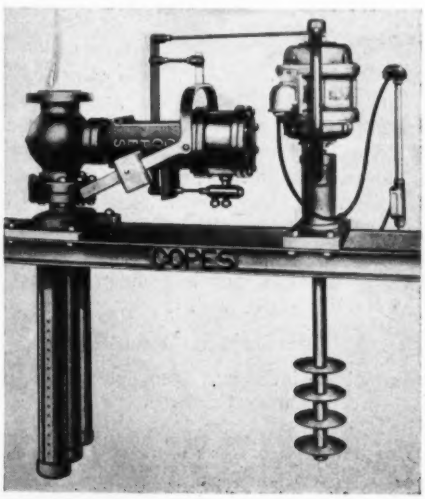


FIG. 1

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Northern Equipment Co., Erie, Pa.

in viscosity will therefore cause a corresponding variation in the torque required to rotate the disks. The diameter of the disks and their speed of rotation were determined experimentally to provide a favorable change in torque with a given change in consistency.

Torque Measurement

Figure 2 shows the relationship between torque changes produced by the rotating disks and changes in consistency. The shape of the curve reveals the useful limits of this type of control. At low consistency, it takes much more variation in consistency to produce a given change in torque than at a higher consistency. Since the accuracy of the torque-measuring device is constant and independent of the controlled consistency, it follows that the control is more accurate at the higher consistency settings. A controlled consistency of 3 to 3.5% is usually recommended, although these are by no means the low or high permissible limits.

The torque-measuring mechanism is of the dynamometer type. The ¼-hp. motor driving the disks at a constant speed of about 600 r.p.m. is supported vertically from its shaft by a cast iron bracket. Its frame is free to turn through an angle of about 300 deg. in response to torque changes produced by the rotating disks. Electric current is supplied through a flexible cable. Friction has been minimized. The disks are mounted on a ball bearing shaft, and the motor is of the ball bearing type.

Construction Simplicity

The tendency for the motor frame to turn is counterbalanced by weights on the dilution valve levers. The connection between the motor frame and the valve has been kept as simple as possible. It is a thin, flexible stainless steel tape wrapped around a pulley fastened to the upper part of the motor frame and attached to the weighted valve lever. It needs no lubrication or other maintenance. There are no gears; there are no springs, weights being used for adjustment of the controlled consistency. With the weights close to the valve, a low consistency is maintained. As the weights are moved away from the valve, the controlled consistency is increased.

Dilution Valve

To assure greater sensitivity, only a small amount of energy from the torque-measuring mechanism is used to initiate operation of the dilution water valve. This valve is hydraulically-operated, the operating medium being clear water at any pressure from 30 to 100 lb. per sq. in. Movement of the tape in response to torque changes acts through a lever to operate a small but sensitive pilot valve. This pilot controls the hydraulic energy actually operating the dilution valve. The valve size is carefully determined for each installation and the general practice is to use V ports accurately designed for the most desirable flow characteristics. This means accurate control of the dilution water flow through the entire operating range.

Water from the dilution valve is admitted to the stock through 3 distributor pipes, shown in Fig. 1 on the lower left. Holes in these vertical pipes permit a thorough cross-sectioning of the stock with water. The dilution point is placed as close as practicable to the control point, the actual distance being less than 3 feet. This minimizes the time lag between the measurement of consistency and the corrective dilution of stock, making hunting of the control virtually impossible and thus permitting greater accuracy of control of the maintained consistency.

The diluted stock is then directed through a converging channel in which the 4 horizontal rotating disks measure the consistency. Since the dilution water is admitted to the stock in more or less vertical planes, measuring the consistency in horizontal planes through the entire stock flow assures an average measurement of the controlled stock density.

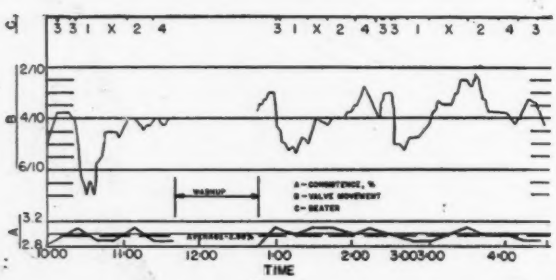


FIG. 3
Six-Hour Test of Consistency Control

Recorded Consistency

Without some device to give a continuous graphic record of actual consistency of stock in process, it is a matter of conjecture as to how accurately a consistency control can maintain the desired consistency. It is easy to claim the stock density can be held within ± 0.1%. To prove it is actually being done is more difficult. The usual moisture-free tests at best give only a check on the consistency at the moment each sample is taken. Figure 3 shows a 6-hour test of the control in a sulphite paper mill. The control was installed ahead of the jordan, stock for which was pumped from a chest into which 5 beaters were discharged. As these beaters were at different distances from the chest, it was necessary that the stock from each one be diluted a different amount to facilitate moving it. The stock from the beater nearest the chest was at a much higher consistency than that from the most remote beater. This caused a wide variation in the consistency of the stock entering the chest, depending on which beater was being discharged. The beaters were discharged on an irregular time cycle, as indicated by the *beater* line on the chart. *Valve movement* was measured in tenths of total valve lift and was not corrected for port area to give a direct relation to the water flow. *Consistency* was measured on the moisture-free basis from samples taken at 15-minute intervals. The desired consistency was 3.0%. The average maintained was 2.98%; the range from 2.8 to 3.1%. The control handled all the stock for a Fourdrinier producing about 35 tons of paper a day.

Comments on Results

The engineer of the mill who supervised this test made these comments on the results:

"Further adjustment would permit greater utilization of the sensitivity of the control so that the range of 0.3% would be decreased, but results have been so generally satisfactory that no attempt has been made to test this.

"After the 75-minute washup period, the control demonstrated its ability to swing back into action and hold a uniform consistency after the temporary stoppage of all flow through the system."

Water Treatment at the National Container Paper Mill*

By R. C. Richter[1] and F. J. Lammers[2]

Critical hydrogen sulphide corrosion of Fourdrinier wires and other water handling equipment producing sulphate pulp and liner was overcome by chlorination of the water. Excessive water scaling of screens, deckers, piping, and throughout the mill was traced to calcium bicarbonate to the exclusion of other hardness. Softening equipment, installed for selective removal of calcium carbonate, eliminated scaling, shutdown, and cleaning losses. The essentially pure calcium carbonate sludge is reburned with causticizing lime, recovering both the lime used in softening plus additional lime from the water.

This paper is presented to show how a difficult water problem was overcome, using critical analysis of causes and remedies to select an economical solution. Often such problems appear difficult or expensive at first approach, but can be corrected with advantage and economy when the basic factors and reactions involved are known, and proper equipment provided. The chemical reactions concerned in this case are all simple and familiar to those having any acquaintance with first inorganic chemistry.

The water supply of National Container Corporation of Jacksonville, Florida, is obtained from deep artesian wells, as is the case with most of the mills located on the south Atlantic seaboard. An analysis of the water is given in Table I to facilitate following the solutions to the problems presented. Trouble of critical nature was caused by hydrogen sulphide and calcium bicarbonate. The problem presented by the hydrogen sulphide was one which called for immediate solution; the one presented by calcium bicarbonate was not so pressing and was taken up later.

TABLE I.—RAW WATER

	Raw, p.p.m.
Turbidity	2
Color	5
Calcium carbonate as $CaCO_3$ *	124
Calcium sulphate as $CaSO_4$	45
Magnesium carbonate as $MgCO_3$	0
Magnesium sulphate as $MgSO_4$	113
Sodium sulphate as Na_2SO_4	1
Sodium chloride as NaCl	27
Iron oxide as Fe_2O_3	0.3
Silica as SiO_2	22
Hydrogen sulphide as H_2S	1.6
Total alkalinity (M.O.) as $CaCO_3$	124
Phenolphthalein alk. as $CaCO_3$	0
Total hardness as $CaCO_3$	251
Total dissolved solids	332
Free CO_2	27
pH	7.3

* Present as 201 p.p.m. $Ca(HCO_3)_2$

Almost immediately after the starting-up of the mill, the effects of the hydrogen sulphide were felt in full force. The unpainted parts of the Fourdrinier containing copper were turning black. Then trouble really began; the mill had been running for only one week when it was necessary to change the machine wire. When the wire was taken off, it was found to be coated with a black scale-like substance, which when analyzed proved to be copper sulphide. The wire, upon further examination, was found to be weak and badly corroded. From this time until the problem was solved, a new wire was necessary every seven to ten days, and sometimes oftener.

The following methods given in outline form were considered for the removal of the hydrogen sulphide:

METHOD A
(1) Reduction of pH to about 4.0 with sulphuric acid.
(2) Aeration by means of (a) spray pond or tower, (b) blowing compressed air through the raw water.
(3) Readjustment of pH with alkali to 8 or higher.

METHOD B
(1) Regulated addition of copper sulphate.
(2) Adjustment of pH to 8 or higher.

METHOD C
(1) Combination of Methods A and B. Copper sulphate to be added either before or after the alkali.

METHOD D
(1) Chlorination (with liquid chlorine) to a residual of less than 1 p.p.m.

After due consideration of space requirements and equipment costs, Method D was selected as the most economical and easiest of control for the hydrogen sulphide. Chlorine for the treatment is purchased in tank car lots and is fed into the water with automatic equipment [3] and normal wire life is now obtained.

The damage done by calcium bicarbonate was not noticed until the mill had been in production for some time. The alkali and temperature rise, characteristic of sulphate pulp and paperboard operation, precipitated the carbonate as a scale throughout the mill equipment. When analyzed, the scale contained little magnesium, although there is a large quantity in the mill water supply. This fact was of great importance.

The scale first made its appearance on the pulp screens in rather startling amounts. The depth of the deposits on the screens slowed down the screening operations and thus made it necessary to clean the screens frequently with inhibited acid. The scale gave trouble next on the decker, making it almost impossible to form a uniform sheet of pulp. This meant further cleaning with inhibited acid which in itself was becoming unduly expensive. How many other places were receiving deposits of troublesome scale could not be made sure of without an examination being made throughout the entire mill.

The costs resulting from lost production could not be separately calculated, as the cleaning was necessarily done whenever it was convenient without causing a complete shutdown. However, it became imperative to prevent loss of production; and mounting costs for acid and cleaning ran to excess. Various methods were given consideration for the elimination of the carbonate scale. The following methods were the ones given the most thought before the final selection was made:

METHOD E
(1) Reduction of pH to about 4 using sulphuric acid.
(2) Readjustment of pH to about 8.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Member TAPPI, Chief Chemist, National Container Corporation, Jacksonville, Fla.
[2] Asst. Technical Director, International Filter Co., Chicago, Ill.

METHOD F

(1) Softening by the zeolite method, using both sodium and hydrogen exchange to produce a water just on the alkaline side.

METHOD G

(1) Selective removal of calcium bicarbonate alone, with lime and alum.

(2) Recovery of the sludge to be reburned in the lime kiln.

Method G was selected for it offered a way to treat the water with little or no chemical cost, because it offered recovery of not only the lime added but almost twice as much. As stated before magnesium was not found or was found only in small quantities in the scale, and it was this fact that suggested the selective treatment.

Lime treatment offered practically complete removal of the calcium carbonate, without precipitating magnesia which would prevent effective lime recovery. Hydrogen sulphide would be almost completely removed and clear stable water delivered without the cost and attention for filters. The first cost of such plant for Method G was less than F, and the operating cost, being practically nil due to the recovery of pure CaO, was less than either E or F. Table II shows the chemical reactions involved in treatment and recovery.

TABLE II.—CHEMICAL REACTIONS

In Raw Water	Fed	Removed	Retained
Selective $CaCO_3$ removal			
$Ca(HCO_3)_2$ (sol)	CaO	2 $CaCO_3$ (ppt)	H_2O
CO_2 (sol)	CaO	$CaCO_3$ (ppt)	$MgCO_3$ (sol)
Full lime softening			
$Ca(HCO_3)_2$ (sol)	CaO	2 $CaCO_3$ (ppt)	plus
$MgSO_4$ (sol)	CaO	$Mg(OH)_2$ (ppt)	$CaSO_4$ (sol)
CO_2 (sol)	CaO	$CaCO_3$ (ppt)	
Lime recovery			
$CaCO_3$	Heat	CO_2 (vol)	CaO

By treatment of the raw water with a chemically precharged slurry of previously precipitated sludge instead of adding chemicals direct, the method avoids localized overtreatment and the necessity for any chemical excess to force reactions to completion. Because of this extreme contact, new reaction precipitates form immediately upon the surface of old particles. This avoids the formation of fines and brings the reaction at once to complete equilibrium without the usual excess of treatment chemical. Inasmuch as calcium hydroxide excess is not carried, no magnesium hydroxide is formed in the sludge, only essentially pure calcium carbonate is precipitated. These two features (prevention of local overtreatment and thorough desupersaturation of calcium carbonate without excess lime) make possible this selective precipitation of almost pure calcium carbonate, whereas ordinary softening would throw down appreciable magnesia with it. Any significant quantity of magnesia interferes with causticizing and lime burning and it would prevent the useful recovery of the sludge by reburning to quicklime, along with the lime mud of the causticizing system.

In addition to recovering the lime used in softening, the sludge contains extra calcium carbonate precipitated from the water which almost doubles the lime input. This additional lime obtained from the water (Table IV) practically pays for both the cost of softening and of reburning. The total lime recovered is used as make-up for the causticizing system and reduces fresh lime consumption.

Figure 1 shows the general arrangement of the softening plant which is of the constant rate type. Treatment is carried out only at the one capacity rating of 3500 gallons per minute; the water control and chemical feeders are started and stopped in accordance with demand by a float switch in a 25 foot diameter by 15 feet high treated water reservoir holding the general mill supply. The accelator steel tank is 46 feet in diameter by 16 feet high and is located on ground level in the mill wood yard. A 12-foot by 20 foot chemical house is located next to the accelator, at grade, containing the water control, chemical feeders and test equipment.

Water from any or all of three wells passes through an electrically actuated, automatic 10-inch rate of flow controller which sets the influent rate of 3500 gallons per minute, and shuts off flow during periods of inoperation. This inlet control, the ground operated chemical feeders, and the chemical pumps are all started and stopped electrically from the treated water reservoir level, so that plant operation is entirely automatic.

Quicklime and aluminum sulphate are used in treatment, being fed by manually adjustable, volumetric dry feeders. The use of quicklime effects a considerable saving over hydrated lime, because only 74% as much chemical is required by weight, and in addition its cost is only 68% of hydrated lime. The quicklime feeder is built integrally with a continuous slaker, maximum capacity 250 pounds per hour, which delivers a uniform suspension of calcium hydrate, automatically removing grits and rejects. The slaker is of totally enclosed construction and is equipped with a dust and vapor remover. The slaked slurry of calcium hydroxide is delivered to the clarifier by centrifugal pump.

The aluminum sulphate dry feeder is of dustproof construction and has a maximum capacity of 60 pounds per hour. The dry chemical is dissolved after mixing, and delivered by an acid-resisting pump to the clarifier. Both feeders and the water control are located convenient to the operator and next to his test table, which contains equipment for determining methyl orange and phenolphthalein alkalinity, hardness, clarity, and pH.

Figure 2 shows the clarifier operation: as is characteristic, the chemicals are not fed to the raw water, but instead into a slurry zone of previously precipitated sludge. The raw water is then rapidly mixed into this chemical-slurry mixture, with the result that all chemical reactions take place in the presence of an enormous surface area presented by the old particles. This means that the water leaving the

[3] Furnished by Wallace & Tiernan.

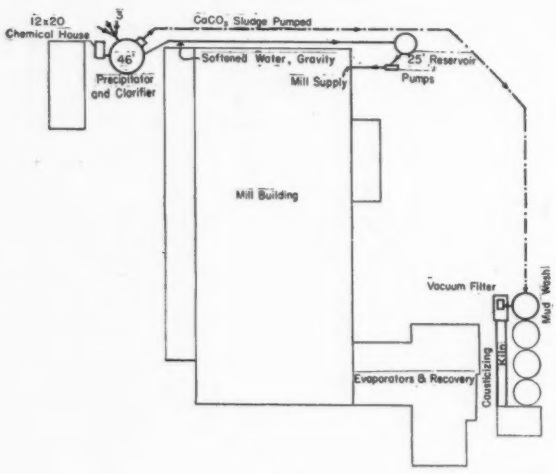


FIG. 1
Accelator Layout in Mill Yard

TABLE III.—RAW AND TREATED WATER

	Raw, p.p.m.	Treated, p.p.m.
Turbidity	2	2
Color	5	2
Calcium carbonate as $CaCO_3$ *	124	32
Calcium sulphate as $CaSO_4$	45	59
Magnesium carbonate as $MgCO_3$	0	0
Magnesium sulphate as $MgSO_4$	113	95
Sodium sulphate as Na_2SO_4	1	10
Sodium chloride as NaCl	27	27
Iron oxide as Fe_2O_3	0.3	0
Silica as SiO_2	22	20
Hydrogen sulphide as H_2S	1.6	0
Phenolphthalein alk. as $CaCO_3$	0	17
Total alkalinity (M.O.) as $CaCO_3$	124	33
Total hardness as $CaCO_3$	251	155
Total dissolved solids	332	244
Free CO_2	27	0
pH	7.3	9.3

* Present as 201 p.p.m. $Ca(HCO_3)_2$

clarifier has really been completely treated. In contrast to ordinary softening methods, no filters or recarbonation are needed to prevent "after precipitation" or turbidity in the effluent.

Since treatment chemical is diffused and distributed through the slurry before reacting with the raw water, and four to five volumes of slurry are recirculated for one unit of raw water, there are no areas of localized overtreatment. On the contrary, both the treatment chemicals and the entering water are widely dispersed, and meet only in exact equilibrium ratios which may be predetermined as desired. The process is so exact that the calcium carbonate can be taken out of the water alone without the usual precipitation of magnesia at the same time.

The slurry zone of the clarifier circulates the chemicals and sludge through the water again and again, so that all chemical reacts and precipitates. At each recirculation, the slurry passes through the annular clear water release zone. Because of the complete equilibrium and desupersaturation in the slurry zone, almost perfectly clear water is obtained almost immediately in release area; a sharp line of demarcation being characteristic between the slurry below and the clear water rising from it. The clarified softened water is taken off at a rate of 2.5 gallons per minute per square foot of free area in the clarifier, with a turbidity averaging 2 parts per million. Thus filtration is unnecessary. Being clear and stabilized against "after precipitation" by equilibrium in the slurry zone, the water is taken direct into the mill for process use.

The excess of sludge, over and above recirculation requirements, is thickened by an internal concentrator to a slurry of 5 to 10% solids by weight. Pumped to the lime mud washer and filter in the causticizing system, it is dewatered and reburned with the causticizing lime. Automatic timers control the sludging operation so that sludge removal is a self-maintained

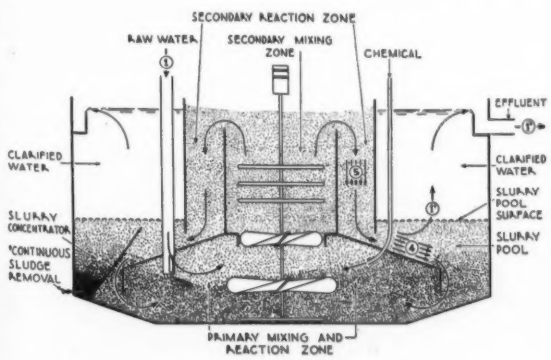


FIG. 2
Diagrammatic Accelator Cross Section

FIG. 3
Accelator Softener at National Container Corporation

operation. Without special sludge collection or disposal, the recovery cycle thus is made both simple and complete.

Table III shows the analysis of both the raw and treated water; the selective removal of the objectionable calcium carbonate is readily apparent. Since this calcium carbonate is a hardness constituent, the total hardness is correspondingly reduced. The residual hardness, principally noncarbonate, causes none of the objectionable precipitation or scale in the pulp washing or various process uses.

Whereas shutdowns and cleaning of screens and washers to eliminate scale and deposit were necessary every three days prior to softening, no subsequent cleaning has been necessary.

Table IV shows the chemical quantities involved in the calcium carbonate softening and lime recovery. With selective calcium carbonate removal, only the lime required for reaction with free carbon dioxide plus calcium bicarbonate is required, which amounts to 103 p.p.m. CaO or 0.86 pound per 1000 gallons. If instead of selective calcium carbonate removal, usual full lime treatment were given the water, 53 p.p.m. or 0.44 pound per 1000 gallons additional CaO would be required for reaction with magnesium sulphate in the raw water, converting it to magnesium hydroxide. This would have necessitated a total of 1.30 pounds per 1000 gallons for treatment or more than 50% more lime.

TABLE IV.—CHEMICAL REQUIREMENTS

Selective $CaCO_3$ Removal	
201 p.p.m. $Ca(HCO_3)_2$ requires	69 p.p.m. CaO; produces 248 p.p.m. $CaCO_3$
27 p.p.m. CO_2 requires	34 p.p.m. CaO; produces 61 p.p.m. $CaCO_3$
Total amount lime required	103 p.p.m. CaO; produces 309 p.p.m. $CaCO_3$
Less dissolved $CaCO_3$ retained in effluent	32 p.p.m. $CaCO_3$
Net sludge $CaCO_3$ recovered for reburning	277 p.p.m. $CaCO_3$
$CaCO_3$ at 277 p.p.m. produces	155 p.p.m. CaO or 1.29 lb. per 1000 gal.
Less the CaO originally fed	103 p.p.m. CaO or 0.86 lb. per 1000 gal.
Extra CaO dividend	52 p.p.m. CaO or 0.43 lb. per 1000 gal.
Full Lime Softening	
201 p.p.m. $(Ca(HCO_3)_2$ requires	69 p.p.m. CaO; produces 248 p.p.m. $CaCO_3$
27 p.p.m. CO_2 requires	34 p.p.m. CaO; produces 61 p.p.m. $CaCO_3$
113 p.p.m. $MgSO_4$ requires	53 p.p.m. CaO; produces 95 p.p.m. $CaCO_3$
$Mg(OH)_2$ also precipitated from $MgSO_4$ produces	55 p.p.m. $Mg(OH)_2$
Total amount lime required	156 p.p.m. CaO; $Mg(OH)_2$ prevents recovery

The 155 p.p.m. CaO recovered from softening, totaling 6300 pounds per day or 25.2 pounds per ton of pulp, has replaced this much new lime required for make-up in the causticizing system. Of this 25.2 pounds recovered, 17 pounds were fed in treatment, and the remainder obtained as a dividend from the water itself. Hence, the distinctive method of selective calcium carbonate removal delivers a suitably softened water, with recovery of lime both from treatment and from water, to repay the cost of both softening and recovery.

Performance of Evaporators*

By J. P. Rubush[1] and G. E. Seavoy[2]

Abstract

A frequent present day problem in the pulp and paper industry is to increase the evaporator capacity in an existing mill. In considering this problem, several important points are usually dominating factors such as ultimate capacity, use of existing equipment, available space, initial cost of the addition and final operating cost. Given unit costs for power, water, and steam data are presented to quickly determine whether quadruple, quintuple, sextuple, or even septuple effect economy can be economically justified.

A typical problem is carried out in several forms to indicate the various steps required to increase the capacity, the discharge liquor density, and the economy.

With the pulp and paper industry generally operating at a high production level a frequent problem is to increase the capacity of the pulp mill from 5 to 50%.

Cost Factors in Evaporation

Let us first consider the problem from strictly an economical standpoint, neglecting such factors as use of present equipment, space limitations, lack of steam, water or power capacity, and other intrinsic but important factors. In other words, we will first isolate the problem to one of pure economy. In this regard the premises are reduced to one of:

A. Steam Cost
B. Power Cost
C. Water Cost
D. Labor
E. Initial Investment
F. Interest
G. Depreciation and Maintenance

In an existing mill Items A, B, C, D, and F are or can be fairly well determined as a basis for calculating the economics. The problem then resolves itself into Item E, which in turn is governed by the following:

A. Conditions of Operation
   1. Solids per ton
   2. Range of concentration
   3. Feed temperature
   4. Steam pressures
   5. Available cooling water temperature (maximum)
      (*Note:* This determines last effect vacuum)
B. Number of effects
C. Arrangement
D. Square Feet of Heating Surface
E. Type of Evaporators
F. Auxiliaries
G. Materials of Construction

Depreciation and maintenance can then be evaluated from the calculated results of the above.

As a basis for a detailed evaluation of Item E (initial investment), we have chosen an average condition of 110,000 pounds hourly evaporation which when converted to tons of pulp per day would represent the following two more or less extreme conditions. (1) Hard cooked stock—i.e., paper board. (2) Soft cooked stock—i.e., bleaching.

	Total Solids lb.	Evaporation lb./hr.	Total Solids Feed %	Total Solids Discharge %	Total Solids lb./hr.	Airdry Pulp /Day tons
1.	2750	110,000	16.5	55.0	26,000	226
2.	3500	110,000	16.5	55.0	26,000	178

Heat balances, evaporator designs, and estimates have been prepared in detail from which the operating costs of Item A (steam cost) through Item G (depreciation and maintenance) have been calculated. An example of this method of calculation is given in Table I for the quadruple effect evaporator.

TABLE I.—OPERATING COST QUADRUPLE EFFECT EVAPORATOR

(On basis of 110,000 lb. hourly evap.—360 days per year)

Cost of Installation					
Evaporator					$51,500
Supports and foundation					5,150
Erection					3,750
Insulation					3,090
Total cost installation					$63,490
Interest, depreciation, and maintenance @ 16%					$10,180
Operating Cost					
Steam A @ 10c/M					$28,944
B 15				$43,416	
C 20			$57,888		
D 25		$72,360			
Water cost @ .5c/M gal.	$6,428				
Electric P. @ .3c/kw.hr.	830				
Operator @ 60c/hr.	5,184				
Tube cost	4,577				
Total	$17,019	17,019	17,019	17,019	17,019
		$89,379	$74,907	$60,435	$45,963
Interest, depr. and maint.		10,180	10,180	10,180	10,180
Total operating cost		$99,559	$85,087	$70,615	$56,143

Total Operating Cost, including interest, depr., and maint. per year

	Total $	Cost/ 1000 lb. Evap'n
Steam cost @ 10c	$56,143	$0.0591
15	70,615	0.0742
20	85,087	0.0898
25	99,559	0.1045

These operating costs have also been determined for quintuple, sextuple, and septuple effect arrangements with steam costs varying from 10 to 25c per 1000 pounds. In all cases the unit costs for power, water, and labor have been kept constant as given in the previous example. In addition, the interest, depreciation and maintenance exclusive of tube replacement cost has been maintained at 16% of the total installation cost. The investment is on the basis of a new installation exclusive of building. Tube replacement costs have been segregated as a separate operating cost item and it has been calculated as an average yearly cost on the basis of a 10-year period.

These costs reduced to dollars per 1000 pounds of water evaporated and plotted *vs.* unit steam cost are shown in Figure 1.

Amortization of Investment

Figure 1 does not directly indicate the feasibility of choosing one arrangement over the other. Qualitatively, however, it indicates that when the steam cost is relatively high, a sextuple or septuple effect arrangement appears to be justified over a quadruple effect arrangement. Conversely, when the steam cost is relatively low—i.e., 10c per 1000 pounds, there is little difference in the cost of evaporation between quintuple or septuple effect arrangements.

---

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Member TAPPI, assistant manager, Swenson Evaporator Co., Harvey, Ill.

[2] Member TAPPI, vice president, Swenson Evaporator Co., Harvey, Ill.

In order to more conveniently analyze the data in Fig. 1 for our purpose, Table I shows the differences in initial investment for the various arrangements, and in each case the months to amortize these differences are given in order that we are able to make the important decision of how many effects can be economically justified.

For instance, in all cases regardless of steam cost a quintuple effect evaporator is indicated inasmuch as the additional investment can be amortized during one year or less. Furthermore, considering a sextuple effect arrangement *vs.* a quintuple effect arrangement, the sextuple effect appears justified when the steam cost is 15c per 1000 pounds or higher, assuming amortization during 4 years or less. In the case of a septuple effect arrangement *vs.* a sextuple effect arrangement, the septuple effect can be justified when the steam cost is 20c per 1000 pounds or higher at an amortization rate of 4 years. However, at the relatvely high rate of amortization of 2.5 years, the septuple effect arrangement can be justified when the steam cost is 25c per 1000 pounds or higher. Conversely, at an amortization rate of 10 years and a low steam cost of 10 to 12c per 1000 pounds, only a quintuple effect arrangement can be justified.

It might seem strange that the difference in investment costs are not linear in amount. This can be briefly explained by the fact that when going from quintuple effect arrangement to sextuple effect arrangement, a single forced-circulation type evaporator body is included as the high-desinty, high-temperature effect instead of two natural circulation first effect bodies in series. Inasmuch as the forced circulation evaporator is provided with stainless steel heating surface, tube replacement costs are reduced.

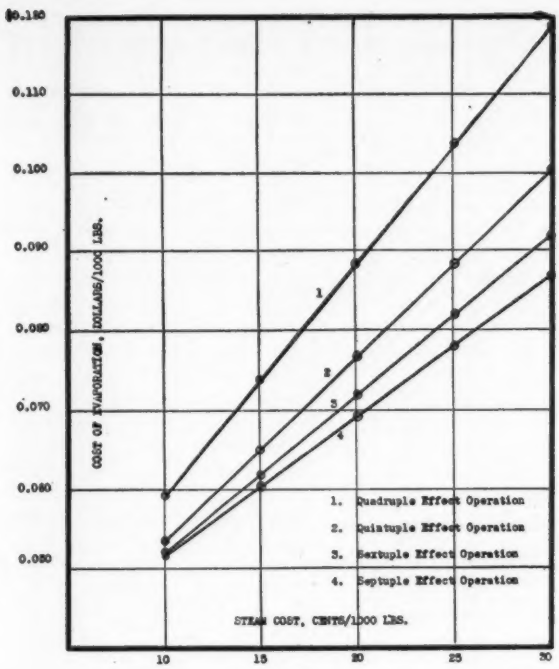


FIG. 1
Evaporator Operating Costs

Rehabilitation of Existing Plant

All this as mentioned before presupposes a new installation and freedom from other limitations such as would exist in the design of a new mill. Now in the problem of increasing the capacity of an existing mill, the economics are essentially the same but because of limiting conditions the best installation from an operating cost standpoint is not always the best form or practical standpoint. However, the first step is to evaluate the problem from an economical standpoint and thereafter revise it to meet the practical limitations involved.

The limitations which usually occur in the enlargement of a given installation are as follows:

A. Space
B. Nature of existing equipment
C. Available steam pressure
D. Cost
E. Available steam, water and power capacities

In almost all cases at least two of these limitations exist and frequently four or five of these are present and must be considered in the final analysis.

The possible modes of attack can perhaps best be pointed out by considering the fundamental equation of heat transfer which is:

Nomenclature

$$Q = HS\ \Delta t\ U$$

Q = Total heat to be transferred
HS = Area of heating surface
Δt = Working temperature drop across heating surface
U = Coefficient of heat transfer

It might be well to point out that the heat transfer equation applies to each effect as well as the complete evaporator in a multiple effect arrangement, for the latter simply divides the total working temperature drop into as many parts as effects and each effect normally has the same heating surface as a single effect evaporator operating on the total working temperature drop. When considering the heating surface it is perhaps simpler in the case of a multieffect evaporator to reduce it to the average square feet of heating surface per effect.

In its most simple form the total temperature drop is the difference between the steam temperature in the first effect heating element and the temperature of the vapors entering the condenser. The actual working temperature drop is reduced to less than the above by the summation of the boiling point ele-

TABLE I.—MONTHS REQUIRED TO AMORTIZE ADDITIONAL INVESTMENT

	Quadruple Effect Evaporator		Quintuple Effect Evaporator		Sextuple Effect Evaporator		Septuple Effect Evaporator
Installation Cost.....	$63,490		$68,700		$82,750		$90,512
Difference		$5,210		$14,050		$7,762	
	Operation Cost Dollars per 1000 lb.	Months to Amortize Add'l Inv. Quintuple over Quadruple	Operation Cost Dollars per 1000 lb.	Months to Amortize Add'l Inv. Sextuple over Quintuple	Operation Cost Dollars per 1000 lb.	Months to Amortize Add'l Inv. Septuple over Sextuple	Operation Cost Dollars per 1000 lb.
Steam @ 10c/1000 lb.	0.0591	10.83	0.0531	135	0.0518	...	0.0518
Steam @ 15c/1000 lb.	0.0742	8.47	0.0665	37.4	0.0618	88	0.0607
Steam @ 20c/1000 lb.	0.0898	5.43	0.0778	30.4	0.0720	48.5	0.0700
Steam @ 25c/1000 lb.	0.1045	4.17	0.0890	26.3	0.0823	27.7	0.0788
Steam @ 30c/1000 lb.	0.1190	3.62	0.101	19.6	0.092	19.4	0.0870

vations in the various effects and miscellaneous losses due to pressure drops.

The coefficient of heat transfer is an empirical factor measuring the quantity of heat transferred per unit heating surface per unit working temperature drop per unit time. This factor or coefficient varies considerably with the design of the heating surface, condition of the heating surface, and conditions of the liquor such as concentration, viscosity, etc.

Increasing the capacity of the unit simply means increasing the quantity Q in the heat transfer equation or the total heat to be transferred. Obviously, Q can be increased by increasing either one or more of the factors on the right-hand side of the equation.

Perhaps an example will best serve to point out how these factors can be applied to a typical problem. Let us assume that the existing equipment consists of 4 horizontal-tube evaporator bodies connected as a quadruple effect evaporator unit as in Fig. 2.

Each effect of this evaporator is provided with 2000 square feet of heating surface and a liquor heater is provided having 400 square feet of heating surface between the fourth and first effect evaporator bodies. The operating conditions are as follows:

Steam pressure—20 lb./sq. in. gage	258° F.
4th effect vacuum—25 in. Hg	134° F.
Total temperature drop	124° F.
Total boiling point elevations	28° F.
Total working temperature difference	96° F.
Average heating surface per effect	2100 sq. ft.
Range of concentration	16% solids to 48% solids
Total evaporation	25,000# hourly
Steam flow to evaporator	8,750# hourly
Over-all coefficient of heat transfer	140

We will further assume that it is desired to increase the capacity 25% on the basis of evaporation, other factors including steam pressure, vacuum, and range of concentration remaining the same.

The simplest expedient would be to double up the third and fourth effect bodies to form the fourth effect of the revised arrangement and add a new first effect body of the same general design shown in Fig. 3. The new first effect evaporator body would be provided with 2200 square feet of heating surface. The revised arrangement would then be provided with a total heating surface of 10,600 square feet or an average of 2650 square feet of heating surface per effect. This is equivalent to an increase over the original installation of 26.2% and the revised arrangement would give the desired capacity increase. It will be noted that, referring again to the heat transfer equation, we have increased only one factor on the right-hand side of the equation which is the area of the heating surface.

By using the same type of evaporator operating at the same temperature and on the same concentration of liquor, the coefficient of heat transfer would not be changed. Carrying the calculation out completely would indicate a small reduction in the coefficient on the revised arrangement as the increase in heating surface is slightly in excess of the 25% as originally desired. This small difference, however, can be neglected.

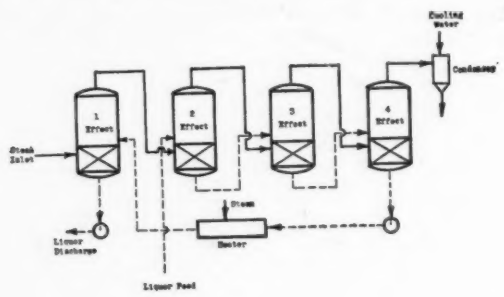


FIG. 2

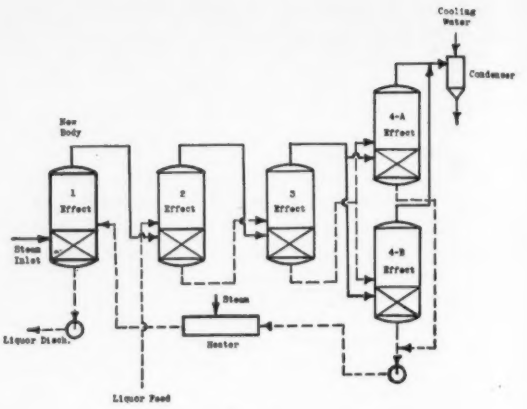


FIG. 3

An alternate method to accomplish essentially the same thing as described in the foregoing would be the addition of a long-tube vertical, film-type unit as the first effect body in place of the horizontal tube unit. This type of arrangement is shown in Fig. 4. In doing this it would not be necessary to install an L.T.V. unit having 2200 square feet of heating surface. A unit having 1400 square feet of heating surface would satisfy the condition. The reason that a lesser quantity of heating surface is required is because a higher coefficient of heat transfer is obtained by changing the design of the heating surface. In other words, where we previously figured the coefficient at 140, the L.T.V. unit would operate on a coefficient of approximately 220. Considering that the same conditions of operation would be utilized, it is then possible to install the smaller amount of heating surface.

Continuing our example further, we will assume that the same original evaporator is used and that we desire to not only increase the capacity of the unit 25% on the basis of evaporation but that we desire to increase the concentration of the liquor discharged from the evaporator from 48% total solids to 55% total solids. We will further assume that the conditions of steam temperature and vacuum remain the

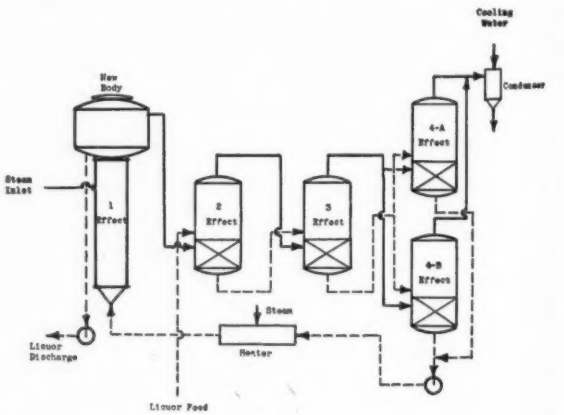


FIG. 4

same. The problem now becomes more involved due to the change in characteristics of black liquor between 48% solids and 55% solids. There is a rapid rise in the viscosity of black liquor at approximately 52% to 53% considering that the temperatures of the liquor remains constant. This change in viscosity accounts for a much lower coefficient in the first effect body than when producing liquor at 48% solids. To accomplish the desired increase in capacity and concentration of liquor, two L.T.V. film-type units would be added and both of these units would become the first effect of the evaporator as in Fig. 5. It will be noted that the original third and fourth effect horizontal tube bodies become the fourth effect of the revised design, while the original first and second effects become the second and third effects respectively of the revised design.

There are two important reasons for splitting the heating surface of the first effect into two bodies. As stated before, the increased concentration would result in a lower coefficient of heat transfer in the first body. In order to make the heat transfer equation balance it becomes necessary to increase the heating surface to offset the reduction in heat transfer. If the heating surface in this first body was all installed in one L.T.V. unit, the flow per tube would be reduced below that point which is considered practical. The second point of consideration in installing the compound first effect is that if all the heating surface were installed in a single body, this total heating surface would operate at the same coefficient of heat transfer. Inasmuch as the change in viscosity has been definitely established at approximately 55% total solids, we find that the 1-A effect body will operate at the reduced coefficient while the 1-B effect body operating on liquor of some 50% total solids will be operating on a coefficient of heat transfer at some point between the minimum coefficient and the coefficient of 220 as pointed out in the previous example for liquor at 48%. Therefore the compound body results in a lower total quantity of first effect heating surface and in a system which is more practical to operate. It contributes to a more flexible installation in that either one or the other of the first effect bodies may be isolated for cleaning with only the minimum of reduction in the over-all capacity of the evaporator.

In this requirement and carrying on our original example further, the 1-B effect body would contain 1400 square feet of heating surface and the 1-A effect body would contain 1000 square feet of heating surface. It will be noted that this arrangement contains an average of 2700 square feet of heating surface per effect producing liquor at a concentration of 55%. Against this let us compare the example producing liquor at 48% and at the same total quantity of evaporation the total heating surface was 9800 square feet or 2450 square feet average heating surface per effect. Referring to the basic equation on heat transfer it will be readily seen that the two factors of heating surface and coefficient have been changed to equal the desired increase in the quantity Q.

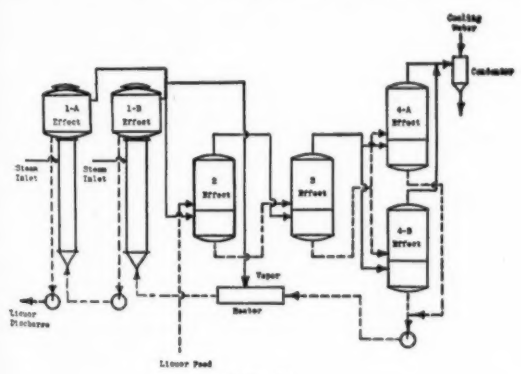


FIG. 5

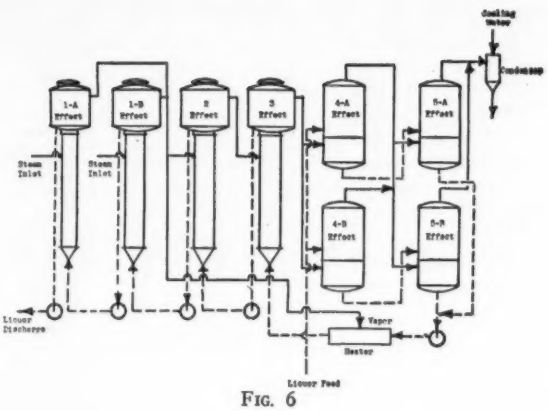


FIG. 6

We have assumed that the final possibility or change that might be desired would involve:

1. An increase of 25% evaporation
2. Increase in concentration from 48% to 55% total solids.
3. An increase in economy from quadruple effect to quintuple effect.

These increases all refer to original equipment as shown in Fig. 2.

To operate a quintuple effect evaporator we would consider it necessary to increase the steam pressure from 20 pounds per square inch gage to at least 30 pounds gage pressure. We are therefore assuming that it would be possible to do this in this example. Primarily this problem results in mainly an increase in the square feet of heating surface, although minor changes have been made in the temperature drop and coefficients under which the various bodies operate. Referring to Fig. 6, the original 4 horizontal-tube bodies are now compounded to form the fourth and fifth effects of the quintuple effect arrangement.

In addition, four new long-tube vertical, film-type evaporator bodies have been installed as the 1-A and 1-B bodies and the second and third effect bodies. In this particular case the heating surface installed would be 1000 square feet of heating surface in 1-A, 1400 square feet of heating surface in each 1-B, second and third effect bodies. We have previously explained the reason for installing the compound first effect body when it is desired to concentrate the liquor to 55% total solids. The same reasoning applies in this particular case for the quintuple effect arrangement. Inasmuch as the horizontal-tube evaporator bodies have been compound to form the fourth and fifth effect units, it then becomes necessary to supply new evaporator bodies for the second and third effects. In this particular case the unbalanced heating surface may be questioned, however, the heating surface in the fourth and fifth effects is not utilized to its fullest advantage and by installing new evaporator bodies having a larger area of heating surface, the capacity of the original quadruple effect evaporator could be doubled if desired.

Conclusions

Although the foregoing steps are described quantitatively to some extent, they primarily serve as a qualitative indication of the possibilities to be investigated to most satisfactorily solve mill problems involving increased capacity and/or economy. It is rather obvious that in order to intelligently evaluate any of these possibilities that a thorough study of the existing equipment and its surrounding conditions in the mill must be investigated and data collected to make complete material and heat balances. Proper interpretation of these data can best be made by engineers experienced in evaporator design and operation.

Effects of Heartwood Decay in Western Hemlock on Sulphite Pulps*

By W. F. Holzer[1]

Abstract

Three samples of western hemlock (Tsuga heterophylla) heartwood representing three degrees of wood condition as regards decay; ordinary sound, medium decay, and advanced decay were cooked by a normal, calcium-base sulphite cook. Comparisons were made after a constant cooking cycle. Density of wood decreased with decay, but yield per pound of dry wood substance remained constant. The chlorine demand of the pulp for bleaching increased with decay. Pulp color became darker in presence of decay. In the case of advanced decay the pulp color resembled that of unbleached kraft. Physical and chemical analyses of the pulps showed definite evidences of degradation due to decay, but considering the wide variation of the samples, the deterioration of the fiber was less than might be predicted.

Since the reaction as judged by decrease in base in the cooking liquor appeared to proceed at a nearly uniform rate regardless of decay, the decrease in the rate of pulping as judged by bleachability and lignin content is apparently due to a decreased solubility of lignin.

The similarity of the effects of decay on wood to those of acid degradation are pointed out.

Much of the western hemlock *(Tsuga heterophylla)* in the virgin forests in the Pacific northwest is overmature, and some part of it has naturally become subjected to all the varying degrees of heart rot. In the large trees this condition will vary from discolored, yet usable heartwood, to quite worthless decayed wood. The question of what might be the characteristics of a sulphite pulp absorbing this substandard wood becomes of considerable interest, and in order to develop specific information on the point, experimental sulphite cooks were made using normal sound wood for comparison.

* Presented at the Annual Meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Member TAPPI, Research Chemist, Central Technical Department, Crown-Zellerbach Corporation, Camas, Wash.

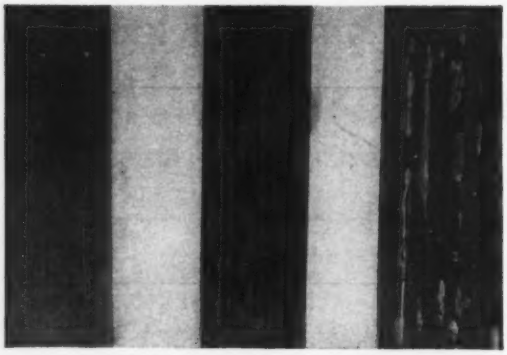


FIG. 1
Samples of Wood Used

Wood Samples

The three wood samples taken represented the following qualities: (1) Sound wood — first quality heartwood, free from discoloration, knots and defects. (2) Medium decay—badly discolored wood with decay plainly visible. (3) Advanced decay—with pits occurring throughout. This was selected as being as badly decayed as could be chipped without disintegration. Representative pieces of the three samples are shown in Fig. 1, arranged, respectively, from left to right. Discoloration in the decayed samples registers in the photograph as darker tones of gray.

Analysis of Wood

Analysis of the wood (Table I) showed no wide fluctuation in the alcohol extract, but this fraction appeared to be slightly greater in the sound sample. The water extract increased progressively with decay from 1.9 to 2.5% and finally 2.8%. On samples previously extracted with water and alcohol the 1% NaOH solubility increased with decay. The values for this test advanced from 13.5 to 15.0%. The water and caustic extractions were in the order expected but for the wide variation in samples were probably less than would have been predicted.

Lignin appeared to be 1.6% higher in the decayed wood than in the sound. This may have been due to more rapid removal of cellulose by rot, or by the production of humic materials from the carbohydrate fraction which become insoluble in the acid digestion

TABLE I.—ANALYSIS OF WOOD

Sample	Sound	Medium Decay	Advanced Decay
Alcohol soluble	2.9	2.1	2.2
Water soluble [1]	1.9	2.5	2.8
1% NaOH soluble [2]	13.5	13.5	15.0
Lignin	28.2	29.9	29.8
Pentosans	8.6	8.5	9.3
Acidity as acetic acid	0.07	0.15	0.32

[1] Previously alcohol extracted.
[2] Previously alcohol and water extracted.

TABLE II.—PULP YIELD AND COLOR

Wood	Sound	Medium Decay	Advanced Decay
Wood density	0.45	0.40	0.33
Yield			
Total-pulp plus screenings	49.2	49.0	49.8
Screened pulp	48.2	47.5	48.2
Screenings	2.0	3.0	3.3
Color (G.E. reflection meter)			
Filter 1	56.8	34.1	30.4
Filter 5	62.3	42.6	38.5
Filter 7	67.2	51.0	41.7
Bleachability, Cl, % (Wiles permanganate method)	9.8	11.0	12.1

test for lignin and appear in the results as lignin. Pentosan material remained about the average for this species of wood. We have no explanation for the higher value in the case of the most decayed sample.

The decayed samples when wet smelled acid-like, and analysis confirmed the point, there being over four times as much acid in the decayed wood as in the sound.

Cooking Equipment and Testing Procedures

Cooking was done in a stainless steel digester having a capacity of about 70 pounds of dry wood or 32 pounds of dry pulp. The digester was fitted for forced circulation with an indirect heater. At the end of the cook the charge was blown into a wooden pit having a stainless steel target and drainer bottom, and was washed in the pit. The stock was screened on a flat screen using four standard 6-cut plates, the accepted pulp and the rejects were collected separately, centrifuged, and tested to determine yield. Physical tests were run according to TAPPI Standards T 200 m and 205 m. Chemical analyses were made according to TAPPI Standards where available.

Cooking

The acid used was calcium base, held closely uniform to 6.35% total, 5.25% free, and 1.10% combined SO_2. The temperature was raised to 275 deg. F. in 4.5 hours and was maintained at maximum for 4.5 hours. Total cooking time was 9 hours. Pressure was controlled at 95 pounds gage. During the last 75 minutes it was reduced uniformly to 30 pounds gage at which pressure the digester was blown. All cooks were made on the above constant time-temperature-pressure schedule and bleachability was allowed to vary at will.

TABLE III.—PULP COLOR IN BASKET TESTS
(All tests taken with no. 1 filter in G.E. reflection meter)

			Medium Decay	Advanced Decay
1.	Wood in digester	Sound		
2.	Wood in basket	Sound and decayed *	Sound	Sound
3.	Test of Item 2 cooked alone in digester	46.8	56.8	56.8
4.	Test of Item 2 cooked in basket with different wood in digester	50.0	48.4	46.3
5.	Test of cook (Item 1)	56.8	34.1	30.4
6.	Change on being cooked with higher or lower grade of wood	+3.2	—8.4	—10.5

* From a previous series.

TABLE IV.—COMBINED SO_2 IN LIQUOR DURING COOK

Wood	Sound	Medium Decay	Advanced Decay
Time, hr.	Combined SO_2, %		
Initial	1.12	1.09	1.13
1	1.10	1.07	1.06
2	0.97	0.88	1.05
3	0.48	0.51	0.51
4	0.39	0.31	0.38
5	0.24	0.16	0.26
6	0.11	0.13	0.16
7	0.11	0.11	0.13
8	0.13	0.11	0.11
9	0.19	0.15	0.16

Density and Yield

The density of the wood decreased with soundness, the specific gravity being 0.45, 0.40, and 0.33. This seemed only natural. However, yield on a weight basis, that is, pounds of dry pulp per pound of dry wood remained essentially constant. This again, was doubtless due to the fact that comparisons were made at constant cooking conditions rather than constant bleachability. It would be true that the lighter wood in a commercial digester would produce less pulp per cook, so that mill production would be impaired in proportion to the loss in density.

Bleachability

The bleachability, or chlorine demand, of the pulps increased with the amount of decay present in the wood. Sound wood yielded a pulp with a Wiles bleachability of 9.8 compared to 11.0 and 12.1 for the pulps from the decayed woods. The amount of decay definitely slows down the rate of cooking as judged by bleachability of the pulps from uniform cooking cycles. On the other hand, the amount of base remaining in the cooking liquor at all times during the cook as determined by the Haug method *(1)* was the same for all three grades of wood (Table IV). Since the decrease in base was uniform for all samples, it would appear that the sulphonation of lignin proceeded at the usual rate in the decayed wood, but that the removal of lignin from the decayed wood was apparently appreciably slower as shown by higher bleachabilities and higher residual lignin contents. The lignin in waste liquor from decayed wood was much less soluble than that from sound wood as judged by ease of precipitation.

Physical Strength Properties

The strength properties of the pulps decreased with increasing decay in the wood although not so much as might be expected. The maximum bursting strengths in order of increasing decay were 167, 150, and 149%. Tearing resistances at maximum burst were 0.96, 1.06 and 0.86%, respectively. The advanced decay sample showed the most definite signs of degradation.

In this connection it should be pointed out again that these comparisons were made at constant cooking conditions with variable bleachability. If the cook had been lengthened or the temperature raised to maintain constant bleachability, or if all samples had been bleached to a uniform color, it could have been expected that the strength of pulps from the decayed wood would have been seriously impaired.

Color

The color of the pulps constituted the most striking effect found. The colors on the pulps from decayed wood were quite similar to unbleached kraft. Brightness values taken on the No. 1 filter of the reflection meter[2] (450 mμ) were, respectively: pulp from the sound wood, 56.8; from the medium decay wood, 34.1; from the advanced decayed wood, 30.4. It was obvious that the brightness of a pulp from this condition of wood would be the property affected most sensitively. Color noticeably lowered before other properties of the pulp were affected.

The question arose as to whether the loss of color was due to the process of decaying or to adsorption of coloring matters from the liquor during the cook,

[2] General Electric.

because the spent liquor from decayed wood was almost black. To check this point a small amount of chips from decayed wood in a stainless steel basket was suspended in the cook of good wood, and a like amount of good chips was suspended in each of the cooks of decayed wood. The results are shown in Table III. The pulp from decayed chips improved in color over that obtained when cooked alone. The improvement in brightness was roughly one third the difference in color between that of the pulp from decayed chips and that of the pulp from good chips when cooked separately. The color of the pulp from good chips cooked in the basket in the digester of decayed wood was lower than when cooked alone by a little more than a third of the difference in color of the pulps from sound and decayed wood. In other words the loss in color of pulp produced from wood containing advanced heart rot is due both to the staining of the fiber during decay and to adsorption of color from the liquor during cooking. The loss due to the first factor is the more important and accounts for probably two thirds of the total.

Chemical Analyses

The lignin content of the pulps was considerably higher for the two from decayed wood than from the sound, 5.68% and 4.74% as against 2.71% for the sound wood (*see* Table VI). As in the case of the wood itself we do not know whether this represented "true" lignin or whether humic materials formed during decay were insoluble in the hydrolyzing acid and became reported as lignin. It was mentioned that the lignin in the sulphite waste liquor from decayed wood was more easily precipitated than that from sound wood. This would indicate that the former is less soluble and would seem to explain the lignin values found in the respective pulps.

All chemical tests indicated a decided degradation of the cellulose in decayed wood. There was a drop on the order of 2% alpha-cellulose. Viscosity dropped sharply from 109 centipoises to 67, and then to 58 as the decay advanced. This is a drop comparable to that sustained in a full bleach.

Copper number increased from 2.68 for sound wood pulp to 3.64 and 3.82 for the medium and advanced decayed wood pulps, which could be presumed might happen; because decay is an oxidizing process, and the intermediate products would be more powerful reducing agents in the alkaline copper solution than contained in pulp from sound wood.

Waste Liquor

Samples of liquor were removed from the digester through a condenser just prior to blowing. Analyses were run according to TAPPI Standard O 403 sm-37. The results are shown in Table VII.

TABLE V.—PHYSICAL TESTS OF PULPS

	Initial			400 cc. Freeness			At Maximum Burst			
	Burst	Tear	Freeness	Burst	Tear	Time	Burst	Tear	Freeness	Time, min.
Sound	73	1.79	730	165	1.02	30	167	0.96	320	35
Medium decay	62	1.84	720	149	1.09	33	150	1.06	300	40
Advanced decay	84	1.58	720	148	0.88	25	149	0.86	310	29

TABLE VI.—CHEMICAL ANALYSES OF PULPS

Wood	Sound	Medium Decay	Advanced Decay
Lignin, %	2.71	5.68	4.74
Viscosity (TAPPI)	109	67	58
Copper number	2.68	3.64	3.82
Pentosans	4.93	3.97	3.98

TABLE VII.—ANALYSIS OF SULPHITE WASTE LIQUOR

Wood	Sound	Medium Decay	Advanced Decay
	g. per l.	g. per l.	g. per l.
Total solids	115.0	128.0	119.9
Ash as sulphates	22.8	21.4	21.7
Calcium oxide	7.7	7.7	7.7
Sulphur—Reported as S			
Sulphur dioxide	2.96	2.21	3.99
Loosely combined sulphur	2.71	2.73	2.64
Sulphates	0.65	0.45	0.56
Combined sulphur	3.36	3.04	3.36
Volatile Acids			
Acetic	2.51	2.56	1.90
Formic	0.74	0.69	1.03
Organic Matter			
Grams oxygen consumed/liter	88.8	118.4	95.2
Furfural	0.13	0.15	0.15
Lignin	50.3	62.2	53.8
Sugars			
Pentoses	5.30	5.92	5.02
Hexoses	21.2	30.3	21.3

The liquor from the medium decayed wood was unaccountably more concentrated than those from the other samples. Only one trend was noticed in the various constituents. In the case of decayed wood the acetic acid content decreased and the formic acid increased sharply. Since both of these acids are volatile and some was doubtless lost in relief, the amounts remaining in the liquor do not represent the total from the cook, but under similar conditions should give a comparison of the total amounts.

A qualitative observation made during these analyses deserves mention. The color of the liquor from sound wood was the normal reddish brown of western hemlock, and that from the decayed woods was nearly black (perhaps an intensification of the normal red color). The former on boiling was stable, whereas the latter two precipitated a black organic material, probably of lignin character. However, when samples were acidified and then boiled, that from sound wood blackened and formed a like precipitate. This suggests that the effect of decay on lignin insofar as a sulphite cook is concerned may be due to or is similar in action to that of acid—i.e., the discoloration and decrease in solubility of lignin which has already taken place in decayed wood can be brought about in normal sulphite waste liquor by acid and heat.

Conclusion

In decayed wood the life processes have ceased. The wood tissue is on its slow way to a return into its simplest elements whence it came. The process of decay is essentially one of progressive oxidation. In organic chemistry oxidation may be traced in regular steps from hydrocarbons, through alcohols, aldehydes, acids, and finally to carbon dioxide. It is only natural that acid, one of the intermediate products of oxidation, is present in decayed wood in considerably increased amounts. Although the concentration is low in comparison to those used in laboratory reactions, over the long period of time of contact this acid in wood is apparently able to cause decreased solubility and deeper color of the lignin, and degradation of cellulose similar to strong acid hydrolysis.

Additional Information

TAPPI Standards, New York, Technical Association of the Pulp and Paper Industry.

Literature Cited

(1) Haug, K., "Analysis of sulphite cooking liquor," *Papir-J.* 22, no. 22:252-255 (Dec. 15, 1934).

Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard; Bleached Sulphite More Acute—Some Grades of Old Waste Lower.

Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations, were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING MAY 3, 1941

SUMMARY

Newsprint .....5,013 rolls
Filter paper.....1 cs.
Tracing paper.....2 cs.

NEWSPRINT

H. G. Craig Co., Inc., ———, Donnacona, 325 rolls.
———, ———, Cornerbrook, 2,148 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 318 rolls.
———, ———, Cornerbrook, 946 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 327 rolls.
International Paper Co., ———, Gatineau, 284 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 334 rolls.
H. G. Craig Co., Inc., ———, Donnacona, 331 rolls.

FILTER PAPER

Karr Ellis Co., ———, Liverpool, 1 cs.

TRACING PAPER

A. M. Schmidt, ———, Lisbon, 2 cs.

RAGS, BAGGINGS, ETC.

Grace National Bank, ———, Valparaiso, 16 bls. old waste.
Padawer Co., ———, Natal, 231 bls. cotton linters.
1st National Bank of Boston, ———, Natal, 247 bls. cotton linters.
W. M. Sliek & Co., ———, Bombay, 460 bls. pickers.
Padawer Co., ———, Bombay, 50 bls. cotton waste.
American Cotton Products Co., ———, Bombay, 100 bls. cotton waste.
Camden Fibre Mills, ———, Bombay, 220 bls. cotton waste.
W. Inter Co., ———, Bombay, 200 bls. cotton waste.
Ernst Mayers Co., Inc., ———, Buenos Aires, 3 bls. old rags.
———, ———, Havana, 19 bls. rags.
Duncan Fox & Co., ———, Cristobal, 8 bls. cotton waste.
———, ———, Cristobal, 181 bls. cotton waste, 24 bls. cotton linters.
Irving Trust Co., ———, Pernambuco, 105 bls. cotton picker waste.
Williamson Products Co., ———, Pernambuco, 205 bls. cotton residue, 122 bls. cotton linters.
Schimmel Trading Corp., ———, Pernambuco, 542 bls. cotton waste.
Lush Cotton Products Co., ———, Callao, 207 bls. cotton waste.

CASEIN

Casein Co., of America, Inc., ———, Buenos Aires, 850 bags, 51,000 kilos.
Chase National Bank, ———, Buenos Aires, 834 bags, 50,040 kilos.

GLUESTOCK

H. Remis, ———, Vera Cruz, 533 pkgs.
———, ———, Havana, 78 bls.

BOSTON IMPORTS

WEEK ENDING MAY 3, 1941

Keer Maurer Co., ———, Buenos Aires, 84 bags casein, 5,040 kilos.

LOS ANGELES IMPORTS

WEEK ENDING MAY 3, 1941

———, ———, Kobe, 4 cs. rice paper.
———, ———, Shanghai, 800 bls. rags.
———, ———, Powell River, 1,305 pkgs. newsprint, 467 bls. chemical pulp, 83 tons.

Henry W. Ellerson Dead

RICHMOND, Va., May 6, 1941—Henry Watkins Ellerson, president of the Albemarle Paper Manufacturing Company, and a leading figure in this city's industrial and social life, died this afternoon at his home, Glen Roy, near here. He was 65 years old, and had been ill since Sunday night.

He also was president of the Universal Motor Company here, and in 1925 was active in organizing the Chesapeake Corporation of West Point, Va., becoming vice president of that corporation and the Chesapeake Camp Corporation, Franklin, Va. He was a former president of the Southern Kraft Association, the Kraft Paper Association, and in 1939 was chosen president of the National Paperboard Association.

Mr. Ellerson was a member of the board of directors of the State-Planters Bank and Trust Company of Richmond, the Richmond Cedar Works, the Medical College of Virginia, the Crippled Children's Hospital and the Richmond Stadium. During the days of NRA he served as a member of the paper industry authority.

Mr. Ellerson was born here, was educated in private schools and began his business career at an early age.

He leaves a widow, the former Miss Mary Patteson; three daughters, Mrs. Osmond T. Jamerson of this city, Mrs. George S. Squibb, Jr. of Elizabeth, N. J., and Miss Jean Ellerson; a son, H. Watkins Ellerson, Jr., and a sister, Mrs. Eugene C. Massie, also of this city.

A. P. & P. H. Gets Honorable Mention

WASHINGTON, D. C., May 7, 1941 — American Paper and Pulp Association received an honorable mention in connection with the ninth American Trade Association executives award for outstanding trade association achievement.

Honorable mention was given to the paper association "for its achievement in maintaining a program of exceptionally wide scope, which included services to its members and its industry in practically all major fields of trade association endeavor. As a result of the program, many problems have been solved through self regulation and increased industrial efficiency."

New York Paper and Pulp Market Review

Paper Market Active With Demand Increasing For Many Grades —Pulp Market Strong With Chemical Wood Pulp On National Defense Control List — Paper Stock Prices Firm and Unchanged.

Office of the PAPER TRADE JOURNAL,
Wednesday, May 7, 1941.

Wholesale volume in many lines of paper continues its upward trend. Reports from many manufacturers' representatives, jobbers, and general paper merchants received during the week indicate that the volume is expected to rise.

The index of general business activity advance to 120.4% for the week ended April 26, from 118.6% for the preceding week, compared with 100.1% for the corresponding week last year.

Paper production for the week ended April 26 was estimated at 98.3%, compared with 89.4% for 1940, with 82.9% for 1939, with 70.4% for 1938 and with 91.6% for the corresponding week for 1937.

Paper board production for the week ended April 26 was 84.0%, compared with 75.0% for 1940, with 68.0% for 1939, with 59.0% for 1938 and with 87.0% for the corresponding week for 1937.

With general business activity at the highest level on record, retail sales for a wide variety of goods are also reported at the highest point. Under the stimulus of government expenditures for national defense, the paper industry is, among other non-durable goods industries, favored with a large and steadily increasing demand.

Late reports reflect optimism as to volume in practically all lines of paper, paper board and paper products. Price advances in some grades are expected in some quarters of the trade, but no important changes from representative market quotations have been reported at this date. Backlog orders are increasing in some divisions of the industry. New customers are reported having some difficulty in getting the quantity of paper they desire. Some manufacturers have already announced that orders are accepted subject to confirmation, but that every effort will be made to fill the normal requirements of old customers.

Chemical Pulp

The chemical wood pulp market continues in a strong position, with paper mill consumption at capacity and pulp production at a high level. The latest ruling of the National Defense Export Control places "unpurified" chemical wood pulp, which is understood to include all paper-making grades, on the no license list, requiring no license for exporting. "Purified" chemical wood pulp, which is understood to include the more refined grades, such as rayon and other special pulps, will require a license.

Imports of all grades of chemical wood pulp for March totaled 72,000 tons; exports totaled 88,000 tons.

Rags

Mill buying of the lower grades of white rags is reported more active at this date than for new white shirt cuttings and the unbleached grade, demand for these grades being reported rather slow this week. Roofing rags are active. No important price changes on any grade of new and old rags have been reported for the week.

Old Rope and Bagging

Demand for old Manila rope continues steady. No change from prevailing market quotations have been reported for the week.

The old bagging market is in a strong position, with demand reported in excess of limited supplies. Prices are nominal at prevailing quotations.

Old Waste Paper

The paper stock market is moderately firm, with demand for the lower grades reported as good. The higher grades of paper stock continue to be soft. No important price changes have been reported this week.

Twine

No important change in the market situation of twine has been reported this week. Demand continues good with most grades on the Export Control List and requiring a license to export.

Southern Kraft to Expand

Officials of the Southern Kraft Paper Corporation, according to a press dispatch from Georgetown, S. C., dated April 26, were noncommittal when questioned concerning persistent reports that the big plant here would be expanded by one-third of its present size. It was said that any announcement would come from the New York office.

Rumors on the street said that the biggest paper machine in the world, about forty feet longer than the present machine, would be installed.

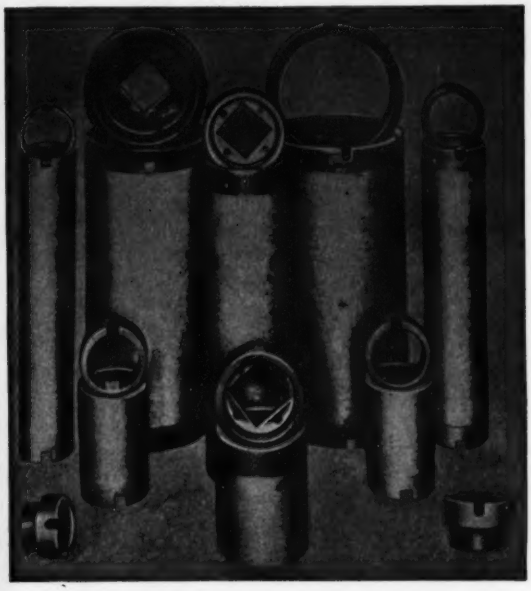
It was understood that construction concerns had been consulted on the matter of providing housing for an increase in workers.

The project was said to involve an expenditure of two or three million dollars.

Ground was to be broken Monday for the addition to the mill, according to these unconfirmed reports.

Kenneth B. Collings Lost at Sea

Kenneth B. Collings, who addressed the Technical Association of the Pulp and Paper Industry at its annual luncheon last year on "What is Really Happening in Europe," according to a dispatch from Ottawa was among the eleven Americans, described as ferry pilots, reported as "missing, believed lost" in an official casualty list issued by the Canadian Ministry of National Defense. These pilots, it is believed, were victims of a torpedo attack in the Atlantic while en route to England.



ELIXMAN

CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

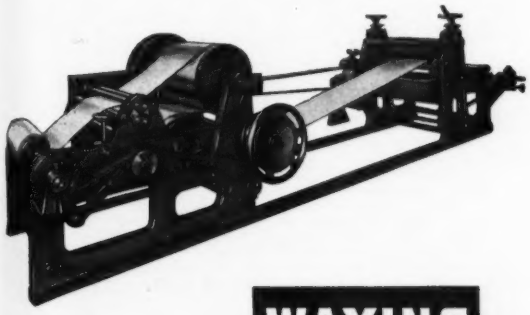
CORES

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

No. AW-2 WAXING MACHINE



WAXING Machine

One of our several types of waxing units used in many production plants at home and abroad. Produces either wet or dry wax paper or light weight board. Perfect controls for temperature, degree of application, accurate rewind and a superior product. In writing refer to No. AW-2.

HUDSON-SHARP

MACHINE CO • GREEN BAY • WIS

NYCO

AMERICAN-MADE, GENUINE

SAP BROWN

In 2 outstanding types:

USA —A bright brown shade

D6000—A dark brown shade

Manufactured only by NYCO in the immediately and completely soluble FLAKE form.

NEW YORK COLOR & CHEMICAL CO.

Div. of American Dyewood Co.

BELLEVILLE, N. J.

Dyestuff Manufacturers Since 1916

BRANCHES:

BOSTON HOLYOKE PHILADELPHIA
CINCINNATI KALAMAZOO CHICAGO

FACTORIES: BELLEVILLE, N. J.; CHESTER, PA.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, May 7, 1941.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $35 per ton, in barrels, at works; the powder is currently quoted at $50 per ton, f.o.b., works. Demand reported moderate for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Shipments reported steady for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm and continue unchanged for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 14½ cents per pound; 80-100 mesh, at 15 cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 13 cents per pound. No quotations on French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Demand reported good. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Market firm. Shipments reported heavy for the current week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices higher on some grades. "G" gum rosin is currently quoted at $1.79 per 100 pounds, in barrels, Savannah "FF" wood rosin is currently quoted at $1.78 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $2.50 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm and nominal. Demand good. Domestic salt cake is currently quoted at $17 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16.50 per ton on imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported good for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are moderately firm and continue unchanged for the current week. Pearl is currently quoted at $3 per 100 pounds; powered starch at $3.10 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported good for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.60 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$6.00
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.50	"	5.00
Standard Wrapping	4.50	"	—
Tissues—Per Ream—Carlots			
White No. 1	.97½	"	—
White No. 1 M. G.	.95	"	—
White No. 1½	.80	"	—
White No. 2	.75	"	—
Anti-Tarnish M. G.	.80	"	—
Colored	.85	"	—
Kraft	.87½	"	—
Manila	.77½	"	—
Unbl. Toilet, 1 M.	3.75	"	—
Bleached Toilet	5.26	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.10	"	—
Bleached, Jr.	3.60	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.75	@	10.75
No. 1 Manila Wrapping, 35 lb.	5.50	"	5.75
No. 2 Manila Wrapping, 35 lb.	5.25	"	5.50

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers	
100% Rag Ext. No. 1	$39.10 @	$46.00	$40.25 @	$47.25
100% Rag	31.05 "	36.50	32.20 "	37.75
85% Rag	.... "	....	29.90 "	35.00
75% Rag	23.60 "	27.75	24.75 "	29.00
65% Rag	.... "	....	21.65 "	26.25
50% Rag	17.55 "	21.50	18.70 "	22.75
25% Rag	14.65 "	17.75	15.80 "	19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers	
No. 1	$9.35 @	$11.50	$11.55 @	$12.75
No. 2	8.50 "	10.25	9.65 "	11.75
No. 3	8.05 "	9.25	9.20 "	11.25
No. 4	7.70 "	9.50	8.90 "	10.75

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$11.90	@	$13.50
No. 2 Glossy Coated	10.35	"	11.75
No. 3 Glossy Coated	9.55	"	11.00
No. 4 Glossy Coated	9.15	"	10.50
No. 1 Antique (watermarked)	9.05	"	10.50
No. 2 Offset	8.40	"	9.75
A Grade E. F.	8.20	"	9.50
A Grade S. & S. C.	8.45	"	9.75
B Grade E. F.	7.65	"	8.75
B Grade S. & S. C.	7.90	"	9.00
C Grade E. F.	7.35	"	8.50
C Grade S. & S. C.	7.60	"	8.75
D Grade E. F.	7.10	"	8.25
D Grade S. & S. C.	7.35	"	8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—	
Moist	No prices
Dry	No prices

(Delivered)

No. 1 Domestic and Canadian	40.00	@ 42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	3.87½
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
News Grade, delivered Unbleached Sulphite	61.00	"	64.25

(On Dock, Atlantic Ports)

Kraft Bleached	4.12½	"	—
Kraft Light & Strong	3.75	"	4.15
Kraft No. 1	3.60	"	4.00

(F. o. b. Pulp Mill)

Kraft Domestic and Canadian	2.75	"	3.37½

(Delivered)

Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.00	@	6.25
Silesias No. 1	4.50	"	4.65
New Unbleached	6.00	"	6.25
Blue Overall	4.15	"	4.50
Fancy	3.25	"	3.50
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.75	"	3.00
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.50	"	3.65
Miscellaneous	2.75	"	3.00
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	1.50	"	1.65
Miscellaneous	1.10	"	1.25
Roofing Rags—			
No. 1	1.35	"	1.40
No. 2	1.05	"	1.10
No. 3 (bagging)	.90	"	1.00
No. 4	.60	"	.65
No. 5A	.60	"	.65

Foreign Rags

All prices nominal.

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

J. Andersen & Co.

Selling Agents

21 East 40th Street

New York

CHEMICAL & MECHANICAL PULP

Kraft Pulp

BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
KALIX TRÄINDUSTRI AKTIEBOLAG
Vanaförden, Sweden
MUNKSUNDS AKTIEBOLAG
Munksund, Sweden
NENSJÖ CELLULOSA A.-B.
Sprängsvikon, Sweden

Bleached Sulphite

KELLNER-PARTINGTON PAPER PULP CO., LTD.
Sarpsborg, Norway
Edsvalla, Sweden
Hallein & Villach, Austria

Unbleached Sulphite

AKTIESELSKABET GREAKER CELLULOSEFABRIK
Greaker, Norway
BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakia
SVANÖ AKTIEBOLAG
Svanö, Sweden

More than just a TRADE MARK

EXCELSIOR KNOX Woolen Co. Camden, Me. FELTS & JACKETS

BUT also a guarantee by men who for 75 years have prided themselves in making finer felts. TO YOU —this is the mark of dependability, longer felt life and greater saving.

KNOX WOOLEN CO.
CAMDEN, MAINE.

West Virginia Pulp and Paper Company

230 Park Ave.
New York

35 East Wacker Drive
Chicago

Public Ledger Building
Philadelphia, Pa.

503 Market St.
San Francisco, Cal.

Manufacturers of

ENGLISH FINISH SUPERCALENDERED
MACHINE FINISHED BOOK
and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Mimeograph, Ledger, Eggshell, Cover and Music Papers, Index Bristol, Post Card and Label Papers

HIGH GRADE COATED BOOK

• • • •

KRAFT WRAPPING AND KRAFT ENVELOPE
KRAFT LINER BOARD
BLEACHED SULPHITE AND SODA PULP
BLEACHED AND UNBLEACHED KRAFT PULP

MILLS:

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Cass, West Virginia
Charleston, South Carolina

ENGLISH ECCO CLAYS CLAYS

ECCO CLAYS TRADE MARK

UNIFORM • SUPERIOR • DEPENDABLE

English China Clays Sales Corporation
551 Fifth Avenue, New York City

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.08	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues.....	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	@	3.25
Wool Tares, light....	2.50	"	2.75
Wool Tares, heavy..	2.50	"	2.75
Bright Bagging.....	2.50	"	2.75
Manila Rope—			
Foreign	5.50	"	5.75
Domestic	5.50	"	5.75
Jute Threads.....	2.75	"	3.00
Sisal Strings	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1....	2.25	"	2.50
Soft White No. 1..	1.80	"	1.90
Soft White Extra..	2.50	"	2.60
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book...	.90	"	1.00
Crumbled No. 1 ...	.70	"	.75
Ledger White Stock.	1.60	"	1.70
Ledger Stock Colored	1.20	"	1.30
Manila—			
New Env. Cut....	1.70	"	1.80
New Cuttings.....	1.30	"	1.40
Old Kraft Machine Compressed bales..	1.35	"	1.50
News—			
No. 1 White News	1.75	"	1.90
Strictly Overissue..	.96	"	1.00
Strictly Folded....	.60	"	.65
Corrugated	.57½	"	.62½
No. 1 Mixed Paper..	.42½	"	.47½

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.19½	@	—
White Hemp	.19½	"	—
Fine Polished—			
Fine India.....	.22½	"	—
Unpolished—			
Box	.15¾	"	—
Paper Makers.....	.15½	"	—
Tube Rope.....	.16¾	"	—
Wall Paper.....	.19½	"	—
Wrapping	.19½	"	—
Soft Fiber Rope...	.17½	"	—
Cotton	.24	"	—

(Hard Fiber)

Medium Java.....	.12	"	—
Mex. Sisal.....	.11	"	—
Manila	.25	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.06½	@	.06¾
New White No. 2.	.03½	"	.04
Light Silesias.....	—	"	.04½
Silesias, No. 1....	—	"	.04
Black Silesias, soft	—	"	.03
New Unbleached..	.06	"	.06¾
Washable Prints..	.02½	"	.03
Washable No. 1..	—	"	.01½
Blue Overall.....	.04	"	.04½
Cottons—According to grades—			
Washable shredding	—	"	.01½
Fancy Percales....	.03	"	.03¼
New Black Soft....	.02½	"	.02¾
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03	"	.03¼
No. 2 Mixed.....	.01¾	"	.02
Corduroy	.01¾	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¾

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	"	3.00
Thirds and Blues—			
Miscellaneous	1.35	"	1.50
Repacked	1.55	"	1.65
Black Stockings (Export)	3.50	"	4.00
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1...	1.30	"	1.35
Domestic No. 2...	1.10	"	1.15
Roofing Bagging..	1.00	"	1.05

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Domestic	3.00	@	3.25
Domestic	2.75	"	3.00
Manila Rope.....	—	"	5.50
Sisal Rope.....	2.00	"	2.25
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	2.75	"	3.00
No. 2.....	—	"	1.50
Wool Tares, heavy..	3.75	"	4.00
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.25	"	3.50

Old Papers

(F. o. b. Phila.)

Shavings—			
Hard White Special	2.50	@	2.70
Hard White.....	2.35	"	2.40
No. 1 Soft White..	1.90	"	2.00
No. 2 White.....	1.70	"	1.85
No. 1 Mixed.....	.90	"	1.00
Solid Ledger Stock..	1.90	"	2.00
Ledger Stock, white.	1.50	"	1.60
Ledger Stock, colored	1.25	"	1.30
No. 1 Books, heavy..	.85	"	.90
Manila Cuttings.....	1.75	"	1.80
Print Manila.....	.60	"	.65
Container Manila....	.50	"	.55
Kraft Paper	1.40	"	1.45
No. 1 Mixed Paper..	.45	"	.50
Straw Board Chip...	.45	"	.50
Binders Board Chip..	.35	"	.40
Corrugated Board...	.60	"	.65
Overissue News.....	.85	"	.90
Old Newspapers.....	.60	"	.65

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	3.15	@	3.25
No. 1 Soft White	2.50	"	2.75
No. 2 Mixed.....	.90	"	1.00
Solid Ledger Books..	2.00	"	2.10
Overissue Ledger Stock	1.75	"	2.00
White Ledger Stocks	1.50	"	1.65
Mixed Ledgers	1.25	"	—
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, Light..	.75	"	.85
Crumpled Stitchless Book Stock	1.15	"	1.20
Manila Env. Cuttings	2.55	"	2.65
Manila Envelope Cuttings, extra quality	2.65	"	2.75
White Blank News..	1.70	"	1.80
No. 1 Kraft.....	1.35	"	1.45
Extra No. 1 Kraft..	1.75	"	—
Mixed Papers.....	—	"	.40
Print Manila	.60	"	.65
Container Manila....	.68	"	.70
Old Newspapers.....	.47½	"	.52½
Paper Wool Strings.	.95	"	1.15
Overissue News.....	.65	"	.70
Box Board Chips....	.35	"	—
Corrugated boxes....	.55	"	.65
Kraft corrugated boxes	1.15	"	1.25
New Kraft Corrugated Cuttings	1.75	"	2.00
Screening Wrappers.	.85	"	.90

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	3.00	@	—
Domestic	3.50	"	3.75
Sisal Rope.....	2.75	"	3.00
Mixed Rope	.83	"	1.00
Transmission Rope—			
Foreign	2.50	"	2.75
Domestic	2.75	"	3.00
Soft Jute Rope.....	4.00	"	4.25
Manila Rope—			
Foreign .....(nominal)			
Domestic	5.75	"	6.00
Jute Carpet Threads.	2.25	"	2.75
Bleachery Burlap....	5.00	"	5.25
Scrap Burlap—			
Foreign .....(nominal)			
Domestic	3.00	"	3.25
Scrap Sisal.....	2.75	"	3.00
Scrap Sisal for Shredding	2.50	"	2.60
Wool Tares—			
Foreign ..... (nominal)			
Domestic	2.85	"	3.00
Aust. Wool Pouches.	2.75	"	3.00
New Burlap Cuttings	4.00	"	4.25
Heavy baling bagging	3.00	"	3.25
Paper Mill Bagging..	2.75	"	3.00
No. 2 Bagging.....	.75	"	.80

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.03¾	"	4.00
New White No. 1.	.06	"	.06¾
New Light Flannelettes	.03¾	"	4.00
Canton Flannel, Bleached	.06	"	—
Underwear Cutters, Bleached	.05	"	.05¼
Silesias No. 1.....	.04	"	.04¾
New Black Silesias..	3.00	"	3.25
Red Cotton Cuttings	.04	"	.05
Soft Unbleached....	.06	"	.06¾
Blue Cheviots.....	.04¾	"	.04½
Fancy	.01½	"	.01¾
Washable	.01½	"	.01¾
Cottons—According to Grades—			
Blue Overalls.....	.04	"	.04¼
New Black, Soft..	.03	@	.03¼
Khaki Cuttings.....	.02	"	.02¼
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.02	"	—
New Canvas.....	.05½	"	—
B. V. D. Cuttings...	.06	"	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	2.75	@	3.00
Miscellaneous	2.00	"	2.25
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	2.00	"	2.25
Old Blue Overalls...	1.60	"	2.00
Thirds and Blues....	1.25	"	—
Miscellaneous	1.25	"	1.35
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.20	"	1.25
No. 2.....	.95	"	1.00
No. 3.....	.85	"	.95

Foreign Rags

(F. o. b. Boston)

Canvas .....(nominal)	
Dark Cottons.....(nominal)	
Dutch Blues.....(nominal)	
New Checks and Blues(nominal)	
Old Fustians.....(nominal)	
Old Linsey Garments.(nominal)	
New Silesias.....(nominal)	

CHICAGO

Waste Paper

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings ...	3.15	@	—
No. 1 Hard White	2.50	"	2.65
No. 1 Soft White.	2.00	"	2.20
Ledger and Writings	.85	"	.95
Solid Books.....	.83	"	—
Blanks	1.45	"	—
Krafts	1.40	@	1.50
New Kraft Cuts....	1.60	"	1.75
Overissue News.....	.60	"	—
Old Newspapers—			
No. 1 Folded News	.70	"	.80
No. 1 Mixed Paper	.45	"	—
Roofing Stocks—			
No. 1.....	.95	"	1.00
No. 2.....	.85	"	.90

Contribute to Reception

O. W. Callighan, chairman, announces that the list of contributors to the reception which preceded the Annual Ladies Night Dinner Dance, Michigan Division of the American Pulp and Paper Mills Superintendents Association, at the Park-American Hotel, April 19, 1941, was as follows: American Wire Works, Parchment, Mich.; Williams-Gray Company, Chicago, Ill.; Stowe-Woodward, Newton Upper Falls, Mass.; Orr Felt and Blanket Company, Piqua, Ohio; American Cyanamid and Chemical Company, Kalamazoo, Mich.; R. T. Vanderbilt Company, New York; Edgar Brothers Company, Metuchen, N. J.; Noble & Wood Machine Company, Hoosick Falls, N. Y.; A. E. Staley Manufacturing Company, Decatur, Ill.; Heller & Merz Division, Calco Chemical Division, American Cyanamid Company, Chicago, Ill.; U. S. Rubber Company, Detroit, Mich.; Howard Smith Paper Company, Montreal; Sturtevant Mill Company, Boston, Mass.; Appleton Woolen Mills, Appleton, Wis.; Albany Felt Company, Albany, N. Y.; Bond Supply Company, Kalamazoo, Mich.; Art Woolan (Gould Pumps), Kalamazoo, Mich.; Beloit Iron Works, Beloit, Wis.; Cameron Machine Company, Brooklyn, N. Y., and one large supply house that does not wish to have its name published.

Salesmen's Bowling Banquet

The bowling league dinner of the Eastern Division of the Salesmen's Association of the Paper Industry, will be held at 6:30 P.M. on Monday, May 5 at the Park Central Hotel, New York. Entertainment will be furnished and prizes will be awarded. Tickets are $3.50 each and may be obtained from Frank Hopkins, 41 Park Row, New York.